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SEPTEMBER 1959

Volume 28 Number 9

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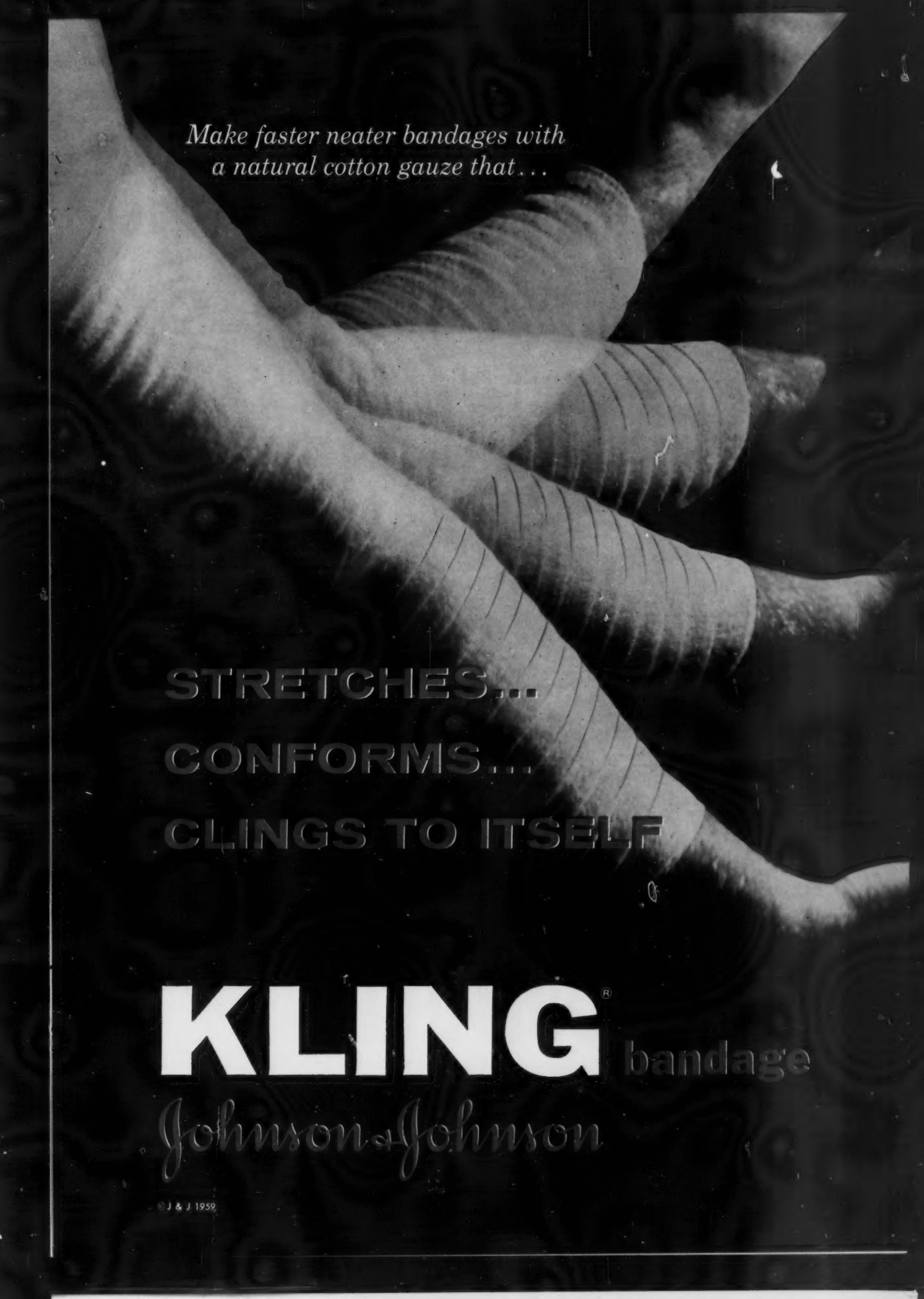
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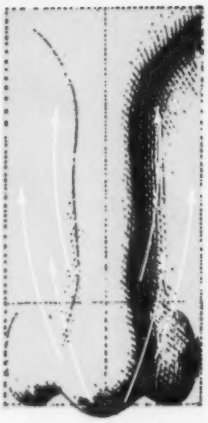

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INDUSTRIAL MEDICINE and SURGERY

ESTABLISHED 1932

The International Journal of Medicine in Industry

SEPTEMBER, 1959
VOLUME XXVIII
NUMBER 9

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PERSONAL NEWS AND NOTES

ALFRED M. SELLERS, M.D., has been appointed medical consultant for the home office medical department of the Fidelity Mutual Life Insurance Company, Philadelphia. Dr. Sellers is an internist and specialist in heart conditions and hypertension. He will divide his time between the Fidelity Company and research and teaching at the University of Pennsylvania.

DR. SELLERS attended Temple University and received his M.D. degree from Duke University, 1951.

He was appointed a Fellow in Cardiology for the hospital of the University of Pennsylvania in 1952, and resident in medicine for the hospital in 1954. He was appointed assistant instructor in medicine at the University of Pennsylvania from 1952 to 1954, and Associate in Medicine in 1956. In addition he is a member of the hypertension section, Robinette Foundation in the medical department of the hospital of the University of Pennsylvania.

—From *Ardmore* (Pa.) *Main Line Times*, July 2, 1959.

WALLACE ARNESON, M.D., and M. W. MORRISSEY, M.D., have been appointed by North Dakota Governor RALPH HERSETH to a state medical panel. The panel was created by state law to determine controversial medical questions in any case on a claim for compensation for an occupational disease. N. WELLS STEWARD, M.D., is a third member of the panel.

—From *Sioux Falls* (S.D.) *Argus-Leader*, July 16, 1959.

ROBERT H. MESSIER, M.D., recently has accepted a position with Union Carbide Nuclear Co., Oak Ridge, Tennessee. DR. MESSIER attended St. Anselm's College and Harvard University. He served as a U. S. Air Force officer prior to attending Georgetown University School of Medicine where he received his M.D. degree in 1958.

—From *Nashua* (Tenn.) *Telegraph*, July 11, 1959.

EDWARD P. LUONGO, M.D., Medical Director of the General Petroleum Company, will be the instructor in courses on industrial health and hygiene, including discussions of occupational diseases and hazards and of plant medical services, to be given at University of California. Evening courses in public health and allied subjects will be presented by the University beginning September 21, 1959. Information on these and related medical, laboratory and nursing classes is available from Medical Extension, UCLA Medical Center, Los Angeles, 24.

C. A. D'ALONZO, M.D., Assistant Director of the Medical Division, E. I. du Pont de Nemours and Company, Wilmington, Delaware, has written a book inspired by the Du Pont Company's success in rehabilitating alcoholics among its employees. The book, *The Drinking Problem and Its Control*, Gulf Publishing Company, Houston, Texas, is a guide to the control of alcoholism by individuals and organizations.

H. GLENN GARDINER, M.D., recently was made President of the Indiana Heart Foundation.

He said he will spend considerable time in the state group's Indianapolis headquarters presiding at monthly board meetings, working with committees and helping direct local affiliates of the state organization.

DR. GARDINER currently is second vice-president of the Industrial Medical Assn. and is a past president of the Central States Society of Industrial Medicine & Surgery.

He is Medical Director of Inland Steel Co.'s Indiana Harbor Works. Before joining Inland in 1950 he was Medical Director of Sears Roebuck, Chicago, for four years. His earlier posts included Medical Director of Foote Bros. Gear & Machine Corp. in Chicago, and independent general and industrial medical practice.

Gardiner, a native of Geary, Okla., received his M.D. degree from the University of Oklahoma in 1935, and served his internship at Columbus Hospital, Chicago.

—From *Gary* (Ind.) *Post-Tribune*, July 1, 1959.

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"Heart Research in Industry" is the title of the Seventh Annual Heart-in-Industry Conference, which will be held October 16, 1959, at the Sherman Hotel in Chicago. The sessions will focus on the significant contribution that industry, a natural laboratory for research, can make in a dynamic collaboration with medical science.

The Conference Chairman is ANDREW J. OBERLANDER, M.D., leader of the Industrial Medicine Committee of the Chicago Heart Association, which is responsible for planning the meeting. Dr. Oberlander is also the Medical Director of The Prudential Insurance Company of America.

Among the featured speakers will be: JAMES WATT, M.D., Director of the National Heart Institute, IRVINE H. PAGE, M.D., Director of Research, Cleveland Clinic Foundation and A. POPE LANCASTER, Vice-President, Manufacturing, Western Electric Company. Their presentations will serve to give industry a broader understanding of the benefits that accrue from the active partnership between industry and medical science for research.

There will be six workshop discussion groups with panelists representing labor, management, medical research, industrial medicine and nursing. These workshops will be charged with the task of discussing key questions growing out of the sessions. They will deal particularly with the "What, How and Why" of studies presently being conducted in several large companies by leading medical research personnel.

It is recommended that reservations be sent early to the Association of Commerce and Industry, 39 West Monroe Street, Chicago 3, Illinois, or to the Chicago Heart Association, 22 West Madison Street, Chicago 2, Illinois.

THIRD ANNUAL WESTERN INDUSTRIAL HEALTH CONFERENCE will be held October 2 and 3, 1959, at the Statler Hilton Hotel, Los Angeles, California.

New York State Society of Industrial Medicine, Inc., announces a scientific program which will take place September 30, 1959, in the Louis XVI Suite of the Waldorf Astoria Hotel, New York City, at 5 P.M.

The general theme of the scientific program is "The Treatment of Pain Syndromes Commonly Encountered in Industry." The speakers and their subjects follow: "The Physiodynamics of Pain" HERBERT KUPPERMAN, Associate Professor of Medicine, N.Y.U.-Bellevue Medical Center, "Headache" ARNOLD P. FRIEDMAN, M.D., Attending Physician, Neuropsychiatry & Physician in Charge, Headache Clinic, Montefiore Hospital and Associate Professor of Clinical Medicine, Columbia College of Physicians and Surgeons, "Dysmenorrhea" MARTIN L. STONE, M.D., Attending Physician & Director, Obstetrics & Gynecology, Flower-Fifth Avenue and Metropolitan Hospitals and Professor and Director of Obstetrics & Gynecology, New York Medical College, "Painful Shoulder Syndrome" ROBERT L. FRANSWAY, M.D., Physician in Charge, Wayne Assembly Plant, Ford Motor Company, Wayne, Michigan and "Back Pain" KALMAN FRANKEL, M.D., Clinical Assistant, Neurology, Jefferson Hospital Assistant Professor, Clinical Neurology, Jefferson Medical College, Philadephia.

The newly formed British Occupational Hygiene Society has as its official organ *The Annals of Occupational Hygiene* with DR. C. N. DAVIES as chief editor. The publisher is Permagon Press with offices in London and New York.

This quarterly is now in its second issue. The first (Dec. 58) was devoted to the topic of noise in industry. The quality of the eleven contributions is superb. The second issue (April) contains five articles on various topics. The lead article is entitled "Enzymes in the Development of Silicotic Fibrosis in the Lungs of Rats." The experimental work reported constitutes a notable addition to the understanding of the causes of silicosis.

ROBERT N. ARMEN, M.D., has been appointed Assistant Chief Physician for the Pittsburgh General Office headquarters of United States Steel Corporation, it was announced recently by ROBERT B. O'CONNOR, M.D., Medical Director for the Corporation.

He will be associated with JAMES C. HAYES, M.D., Chief Physician.

DR. ARMEN is a graduate of the American University of Beirut, Beirut, Lebanon, where he obtained his medical degree in 1934. He interned at the American University School of Medicine Hospital, and in 1940 came to the United States on a fellowship in internal medical research at Johns Hopkins.

Following a residency and assistant professorship in internal medicine at Cornell University, he served for three years as medical officer in the U. S. Army Medical Corps.

Since 1946, DR. ARMEN has been associated with various Veterans Administration hospitals. He has been Chief of Medical Services at the Veterans Administration Hospital in Clarksburg, West Virginia, since May, 1958. He held teaching appointments in internal medicine in cities where assigned.

DR. ARMEN is a Diplomate of the American Board of Internal Medicine; a Fellow of the American College of Physicians, the American College of Chest Physicians, and of the American College of Cardiology; a member of the American Medical Association and of the American Heart Association.

JAMES N. WAGGONER, M.D., has joined The Garrett Corporation's Airesearch Manufacturing Division in Los Angeles as Medical Director. He formerly served as regional Medical Director for United Air Lines with whom he had been associated since 1952. Receiving his Doctor of Medicine degree from Indiana University School of Medicine, he served six years with the Navy and received six service-connected battle citations. He is a member of the faculty at UCLA and the University of Southern California and has authored several medical publications. For the past five years he served as secretary to the Airlines Medical Directors' Assn. and more recently was chairman of general arrangements for the 1959 Aerospace Medical Assn. to be held in Los Angeles, Calif., this year.

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1. Shane, S. J., Krzyski, T. K., and Copp, S. E.: Canad. M. A. J. 77:600 (Sept. 15) 1957.

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Institute of Industrial Health of the University of Cincinnati announces that the fourth biennial course of instruction in Occupational Skin Problems will be given during the week of October 26 to 30, 1959. It will be presented by the Department of Preventive Medicine and Industrial Health, University of Cincinnati, in collaboration with the Occupational Health Program of the United States Public Health Service and the Department of Dermatology of the University of Cincinnati. The objective of this course is to give physicians a greater understanding of cutaneous problems of occupational origin.

The program will be divided into daily sessions, consisting of morning lectures and clinical demonstrations, afternoon field instruction in industrial plants and evening panel discussions. The didactic presentations will include a review of the anatomy, physiology and chemistry of the skin. Detailed consideration will be given to the etiology, diagnostic evaluation and treatment of occupational dermatoses, as well as specific measures for prevention and control of these problems. Current concepts regarding cutaneous cancer, allergic reactions and medicolegal problems will be discussed.

Physicians interested in attending the course should write for an application blank to Secretary, Institute of Industrial Health, The Kettering Laboratory, Eden and Bethesda Avenues, Cincinnati 19, Ohio. Early application is advised since attendance will be limited.

The American Association of Industrial Nurses has established an annual professional lecture, it was announced by MARGARET L. STEELE, R.N., President of the AAIN. The lecture, devoted to various aspects of industrial nursing practice and theory, was established in honor of CATHERINE R. DEMPSEY, R.N., first President of the national industrial nursing group.

The Catherine R. Dempsey Lecture will be delivered at the Conference of the American Association of Industrial Nurses which is held annually in conjunction with the National Industrial Health Conference. The guest lecturer will be selected by the Board of Directors of the AAIN.

Florida East Coast Industrial Nurses Association has organized a seminar for industrial nurses and allied agencies of industrial medicine to be held September 11 to 13, 1959, at the Deauville Hotel, Miami Beach, Florida.

The schedule has been carefully planned so as to provide a maximum of information which will fill the greatest variety of the needs of modern industrial nursing.

A select group of noted physicians, nurses and educators in the field of industrial medicine will present the latest information in their respective fields and all present will be given the opportunity to present their individual problems for discussion. This high interest program will include such subjects as eye and ear conservation, new drugs and toxicology, and alcoholism in industry. Preventive medicine in relation to insurance premiums, cancer, tuberculosis and rehabilitation will also be discussed.

Died

HARRY E. MOCK, SR., M.D., F.A.C.S., 78, at Daytona Beach, Florida, on June 30th. DR. MOCK was born in Indiana; attended Franklin College, Franklin, Indiana, 1900-02, and University of Chicago 1902-04; earned his M.D. at Rush Medical 1904-06, and interned at Cook County Hospital 1906-07. He began his distinguished career in industrial medicine in 1908 as Chief Surgeon for Sears Roebuck, at Chicago, continuing in that position until 1917. In World War I he was a Colonel in the Army Medical Corps, and in 1919 was the Army's delegate to the Allied postwar conference on rehabilitation of disabled soldiers, in Rome. Resuming his industrial practice, he became Consultant for various industries and railroads. In 1921 he published his 846-page textbook entitled *Industrial Medicine and Surgery*, following this during his near 50 years of practice with 100 or more important articles on medical and surgical subjects. With ANDREW HARVEY, then Medical Director of Crane Company, Chicago, he inaugurated the movement that led to the organization of the American Association of Industrial Physicians and Surgeons in 1915. His leadership in that development is described in the forthcoming work entitled *Occupational Health in America — Evolution of the Industrial Medical Association*. DR. MOCK was Professor of Surgery, Northwestern University Medical School, and Senior Surgeon at St. Luke's Hospital, Chicago. In honor of his work in physical therapy, a school for crippled children, at Muncie, Indiana, his birthplace, was named for him.

His practice in Chicago continued to 1955, when he retired, and made his home in Florida. He was, indeed, a pioneer in the establishment of medical services in industry, as well as the originator of numerous medical department methods that are now standard practice.

CASSIUS H. WATSON, M.D., F.A.C.S., 81, at Brookfield Center, Connecticut, on June 1st. DR. WATSON was born in Brooklyn in 1878; attended University of Pennsylvania 1898-1901, and Long Island College of Medicine 1901-05; took postgraduate work at Clark University, Worcester, Massachusetts, 1901; interned at Long Island College Hospital, Brooklyn 1905-07. He was in general practice 1907-14, began his industrial medical work at New York Telephone Company in 1913, and two years later became Medical Director for American Telephone and Telegraph Company, New York.

He retired in 1943, and for a while engaged in special practice in surgery. He was a charter member of the American Association of Industrial Physicians and Surgeons, and served it as Director and later as President. His long identification with industrial medicine was distinguished by many accomplishments in the development of, and emphasis upon, diagnostic work in company medical services. He was the subject of a career profile in this Journal in 1943 (*Industrial Medicine*, 12:12, 843).

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References: 1. Farah, L.: Internat. Rec. Med. *169*: 379 (June) 1956. 2. Over 200 laboratory and clinical papers from 14 countries.

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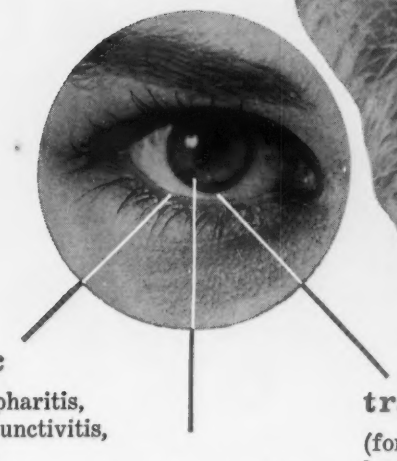

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Prophenpyridamine tannate	37.5 mg.
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Reduce absenteeism and inefficiency due to miseries of a cold, with Rynatan . . .

The first long-acting, oral, nasal and sinus decongestant—almost completely free from drowsiness and other side effects: ". . . of 311 patients, incidence of side effects was only 2.2 per cent. Evidence of sedation was (only) 1.2 per cent."[4]

Chemically and physically different. Employs no layers, enteric coatings, pellets, waxes or resins. Sustained action is built right into the molecule—with the Durabond principle.

1. Lawler, E.G. and Limperis, N. M.: Clin. Med. (Dec.) 1958. 2. Medical Science 3:376-377 (Mar 25) 1958. 3. Cavallito, C.J. and Jewell, R.: J. Am. Pharm. A. (Scient. Ed.) 47:165-168, 1958. 4. Antibiotic Med. & Clin. Therapy 5:578-581 (Sept.) 1958.

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INDUSTRIAL PHYSICIANS' REPORT:

Over 85% of workers with epigastric pain

. . . "rapidly and completely relieved of symptoms"

Noting that gastrointestinal symptoms were the chief complaints of more than half the workers reporting for treatment to their industrial clinic, Barden and co-workers* undertook an evaluation of Donnatal in providing rapid relief and minimizing absenteeism.

Based upon repeated clinical observation, case records, and progress reports over an eight-month period, the investigators conclude that Donnatal is "particularly effective for the relief of pain associated with smooth muscle spasm of the gastrointestinal tract." They observe also that:

"More than 85% of patients with epigastric pain and discomfort were rapidly and completely relieved of symptoms."

"...many employees were able to resume work within an hour."

"There was no evidence of undesirable side reactions."

DONNATAL® EXTENTABS** Robins

are particularly useful for industrial therapy, because once-a-day dosage provides effective spasmolysis for a twelve-hour period without the inconvenience of the customary four-hour dosage schedule. True *extended action* spasmolytic effects are provided by the special construction of Extentabs. Immediately after administration the equivalent of one Donnatal tablet is released, followed by the gradual and uniform release of the equivalent of two more Donnatal tablets, to provide sustained effects for 10 to 12 hours.

Each Donnatal tablet or capsule or each 5 cc. teaspoonful of Donnatal Elixir contains: hyoscyamine sulfate 0.1037 mg., atropine sulfate 0.0194 mg., hyoscine hydrobromide 0.0065 mg., phenobarbital (¼ gr.) 16.2 mg.—bottles of 100, 500, and 1000 tablets or capsules, and bottles of 1 pint and 1 gallon of elixir.

Donnatal No. 2 Tablets contain the same amounts of belladonna alkaloids with 32.4 mg. (½ gr.) phenobarbital per tablet—bottles of 100 and 500 tablets.

Donnatal Extentabs contain active ingredients equivalent to three regular Donnatal tablets—bottles of 100 and 500.

*Frank W. Barden, M.D., Paul S. Hill, M.D., William F. Mahoney, M.D., and Kenneth J. Cuneo, M.D., in a report from the Medical Department of the Saco-Lowell Shops and the Webber Memorial Hospital, Biddeford, Maine; published in the January, 1954 issue of the Journal of the Maine Medical Association (Vol. XXXXV, No. 1, Page 11).

**Trade Mark

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TABLETS • CAPSULES • ELIXIR • EXTENTABS**

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA • Ethical Pharmaceuticals of Merit since 1878

relieves

ITCHING OF ALLERGIC REACTIONS

...found effective
in 77% of such cases

now available

NEW 'TEMARIL' SPANSULE® 5 MG.

brand of sustained release capsules

Temaril® Tablets
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relieves itching

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Influenza Virus Vaccine Polyvalent

Contains the National Institutes of Health approved polyvalent strains Types A and B, including Asian Strain.

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Detailed dosage information may be found in the package circular contained in each carton.

For complete information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

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direct antispasmodic action
at the peripheral level
plus control of anxiety and
tension at the central
level... without the dry
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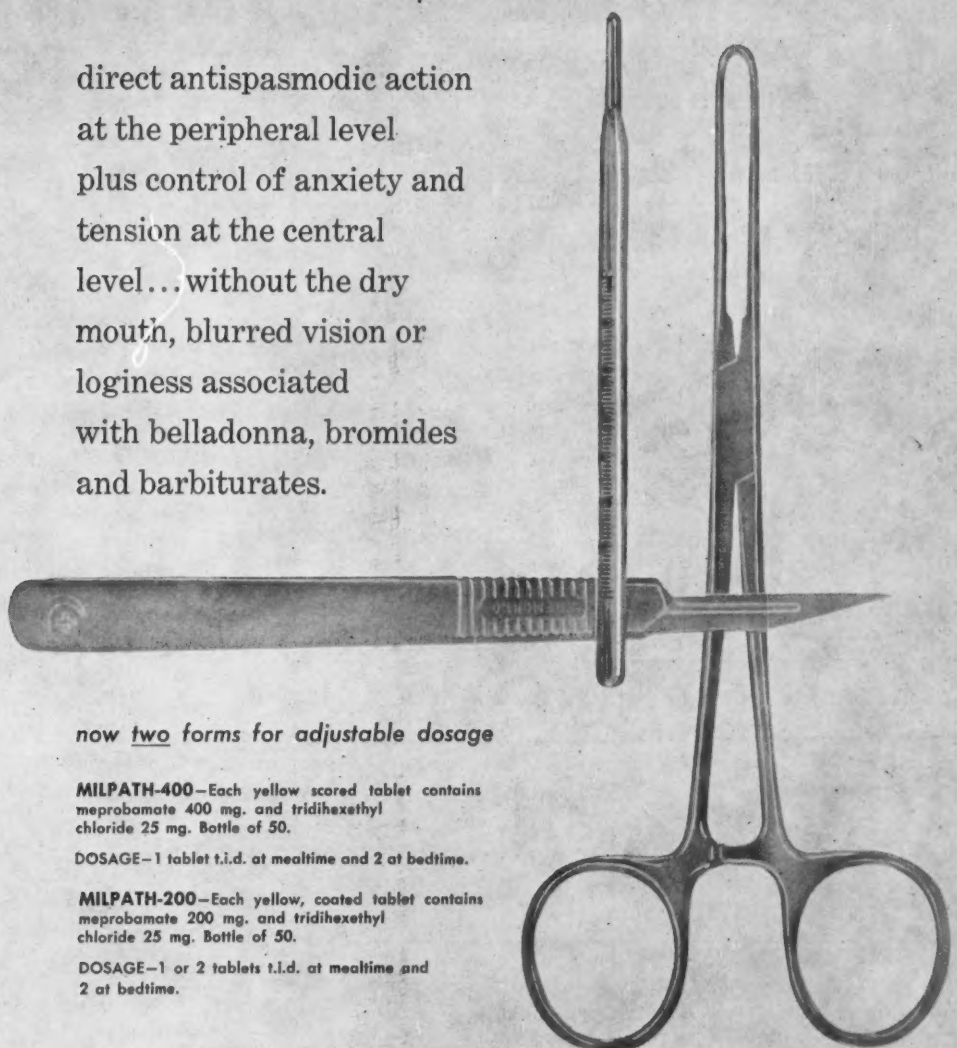

now two forms for adjustable dosage

MILPATH-400—Each yellow scored tablet contains meprobamate 400 mg. and tridihexethyl chloride 25 mg. Bottle of 50.

DOSAGE—1 tablet t.i.d. at mealtime and 2 at bedtime.

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DRISTAN®

TABLETS

afford a new degree of symptomatic relief from

- **SINUSITIS**
- **THE COMMON COLD**
- **ALLERGIC DISORDERS**

Minimizes the Hazard of Drowsiness on the Job

as compared with other preparations containing antihistamines

Unique 3-layer decongestant tablet development offers a combination of ingredients never before possible to put into a single tablet.

DRISTAN—*Faster In Therapeutic Action*

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Disintegrates in 3 hours	Disintegrates in 7 minutes

Dristan Decongestant Tablets—afford *a new degree of relief* from the symptoms of sinusitis, nasal allergies, postnasal drip and the common cold by releasing:

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(2) A UNIQUE ANTIHISTAMINE . . . phenindamine tartrate. Rarely produces drowsiness. Controls the edema and discharge caused by offending allergens.

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(4) Approved APC formula . . . aspirin, phenacetin and caffeine.

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References: Annals of Allergy, Vol. 6. July-August 1948. Study of a New Histamine Antagonist, The Pennsylvania Med. J., Vol. 51. Clinical Study of a New Antihistaminic Drug—Phenindamine. Dristan Clinical Study.

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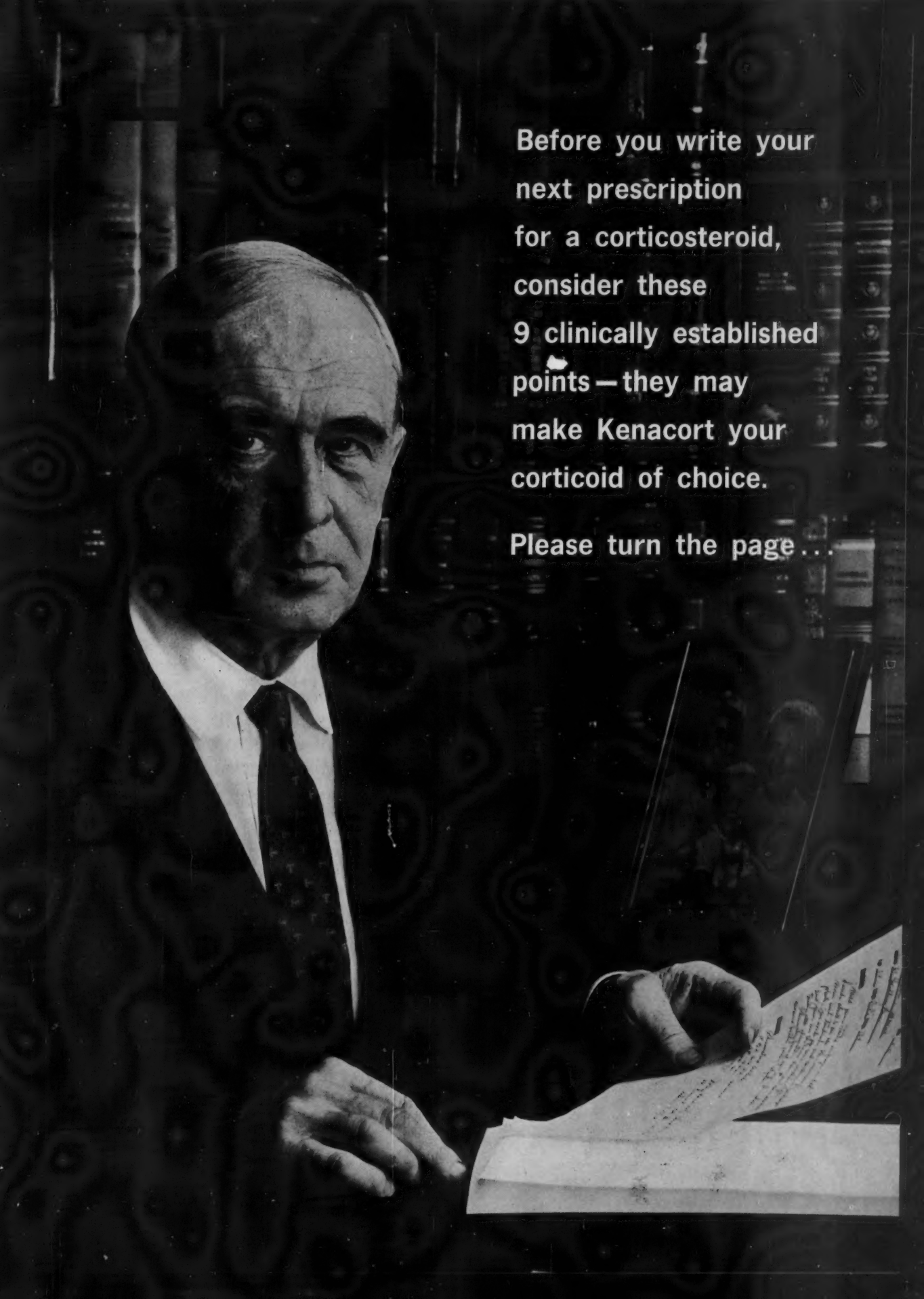
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pre-prescription
point number **1**

initial therapy—remarkably free from complications

Allison, J. R., Sr., and Allison, J. R., Jr.:
Monographs on Therapy 3:99 (Oct.) 1958.

pre-prescription
point number **2**

continuing therapy —maintenance doses are low

Feinberg, S. M.; Feinberg, A. R., and Fisherman, E. W.:
J. A. M. A. 167:58 (May 3) 1958.

pre-prescription
point number **3**

no sodium or water retention—low salt diet not necessary

Hartung, E. F.:
J. A. M. A. 167:973 (June 21) 1958.

pre-prescription
point number **4**

absence of edema

Council on Drugs:
J. A. M. A. 169:257 (Jan. 17) 1959.

pre-prescription
point number **5**

less likely to create electrolyte disturbance

Bonglovanni, A. M.; Mellman, W. J., and Eberlein, W. R.:
J. Pediat. 53:3 (July) 1958.

pre-prescription
point number **6**

no secondary hypertension—no significant change in pulse, respiration, or blood pressure

Shelley, W. B.; Harun, J. S., and Pillsbury, D. M.:
J. A. M. A. 167:959 (June 21) 1958.
Bernsten, C. A., Jr., and others:
New York Rheumatism Association, Annual Meeting,
New York, April 9, 1959.

Kenacort

(SQUIBB TRIAMCINOLONE)

Available in 1 mg., 2 mg., and 4 mg. scored tablets.

pre-prescription point number **7**

no excessive appetite

Council on Drugs:
J. A. M. A. 169:257 (Jan. 17) 1959.

pre-prescription point number **8**

without unnatural psychic stimulation —does not stimulate and rarely depresses the mood

Shelley, W. B.; Harun, J. S., and Pillsbury, D. M.:
J. A. M. A. 167:959 (June 21) 1958.
Council on Drugs:
J. A. M. A. 169:257 (Jan. 17) 1959.

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gastrointestinal complaints infrequent

Hartung, E. F.:
J. A. M. A. 167:973 (June 21) 1958.

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Before application of White's Vitamin A & D Ointment—Second and third degree burns caused by flaming gasoline.

After pressure gauze dressings of White's Vitamin A & D Ointment—changed at weekly intervals—Complete healing with minimal scar tissue and no contractures.

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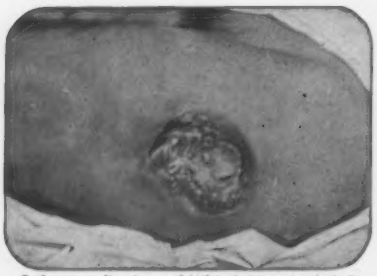
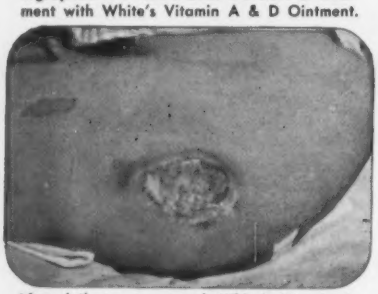


Before applications of White's Vitamin A & D Ointment—Severe pressure sore in area over greater tuberosity of femur.



After daily treatment with White's Vitamin A & D Ointment—The sore is now filled with granulation tissue and shows signs of re-epithelization at margins.

Supplied in 1½ and 4 oz. tubes; 1 lb. jars and 5 lb. containers.

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ANTIHISTAMINIC-ANTISPASMODIC

You can help your allergic patients to enjoy greater comfort during the hay fever season by prescribing BENADRYL. *Its potent antihistaminic action relieves nasal blockage, rhinorrhea, sneezing, itching, and related allergic reactions, while its atropine-like antispasmodic action suppresses bronchial and gastrointestinal spasm.* BENADRYL *Hydrochloride (diphenhydramine hydrochloride, Parke-Davis) is available in a variety of convenient forms including: Kapseals,® 50 mg. each; Kapseals, 50 mg., with ephedrine sulfate, 25 mg.; Capsules, 25 mg. each; Elixir, 10 mg. per 4 cc.; and Emplets,® 50 mg. each, for delayed action. For parenteral therapy,* BENADRYL *Hydrochloride Steri-Vials,® 10 mg. per cc.; and Ampoules, 50 mg per cc.*

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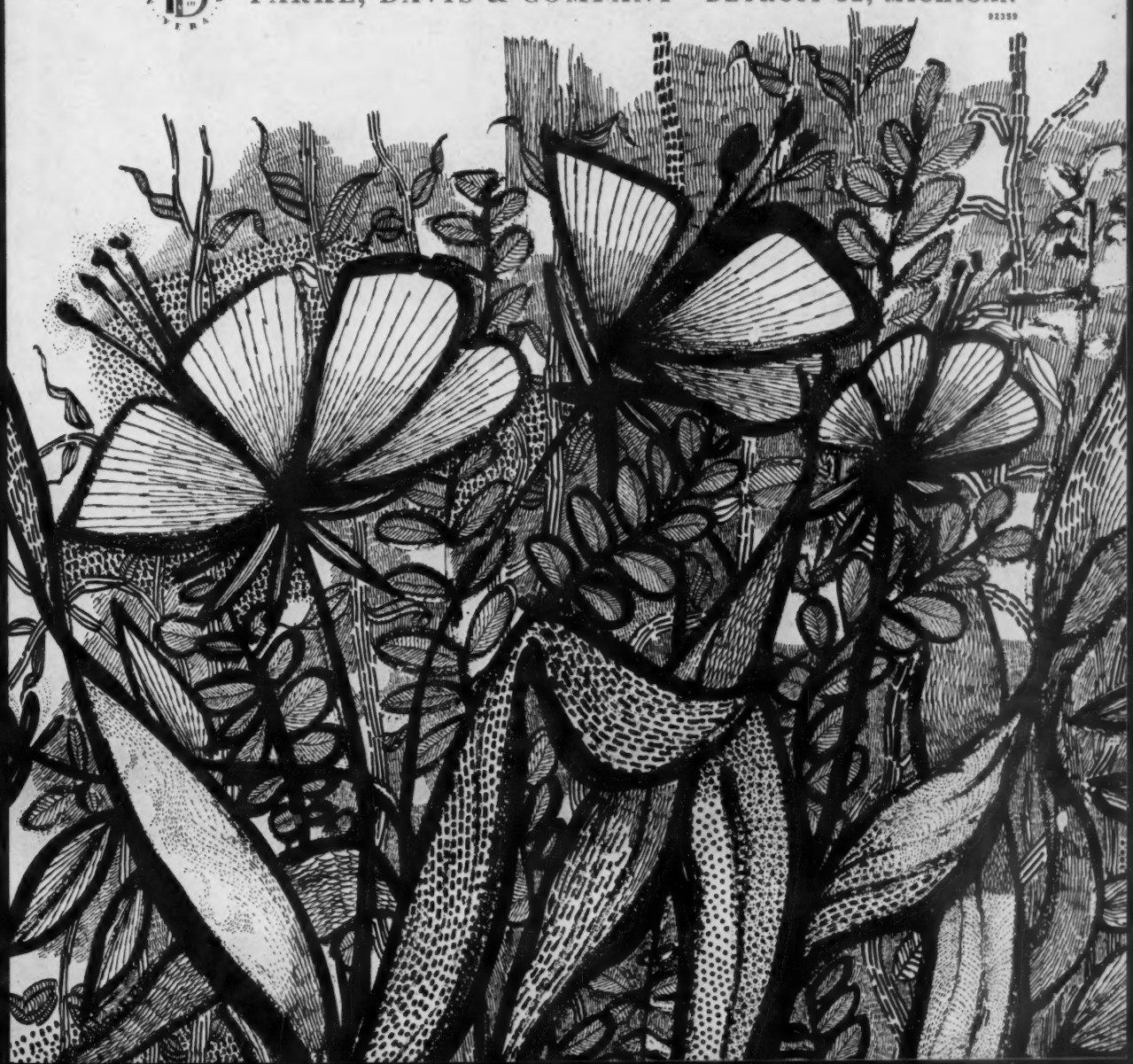

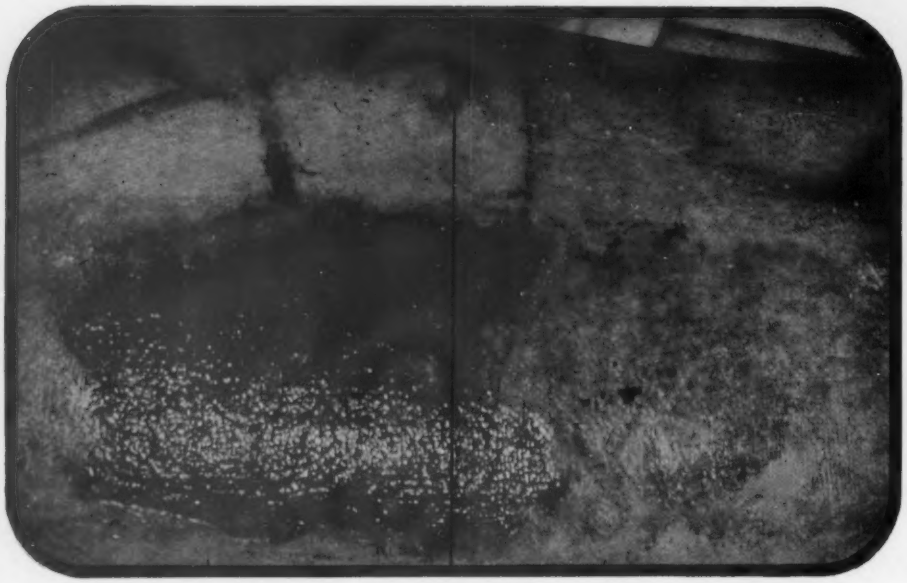

Skin graft donor site after 2 weeks' treatment with ...

petrolatum gauze—still largely granulation tissue | FURACIN gauze—completely epithelialized

OBJECTIVE EVIDENCE OF SUPERIOR WOUND HEALING

was obtained in a quantitative study of 50 donor sites, each dressed half with FURACIN gauze, half with petrolatum gauze. Use of antibacterial FURACIN Soluble Dressing, with its water-soluble base, resulted in more rapid and complete epithelialization. No tissue maceration occurred in FURACIN-treated areas. There was no sensitization.

Jeffords, J. V., and Hagerty, R. F.: Ann. Surg. *145*:169, 1957.

FURACIN®, . . . brand of nitrofurazone
the broad-range bactericide that is *gentle to tissues*

spread FURACIN Soluble Dressing: FURACIN 0.2% in water-soluble ointment-like base of polyethylene glycols.

sprinkle FURACIN Soluble Powder: FURACIN 0.2% in powder base of water-soluble polyethylene glycols. Shaker-top vial.

spray FURACIN Solution: FURACIN 0.2% in liquid vehicle of polyethylene glycols 65%, wetting agent 0.3% and water.

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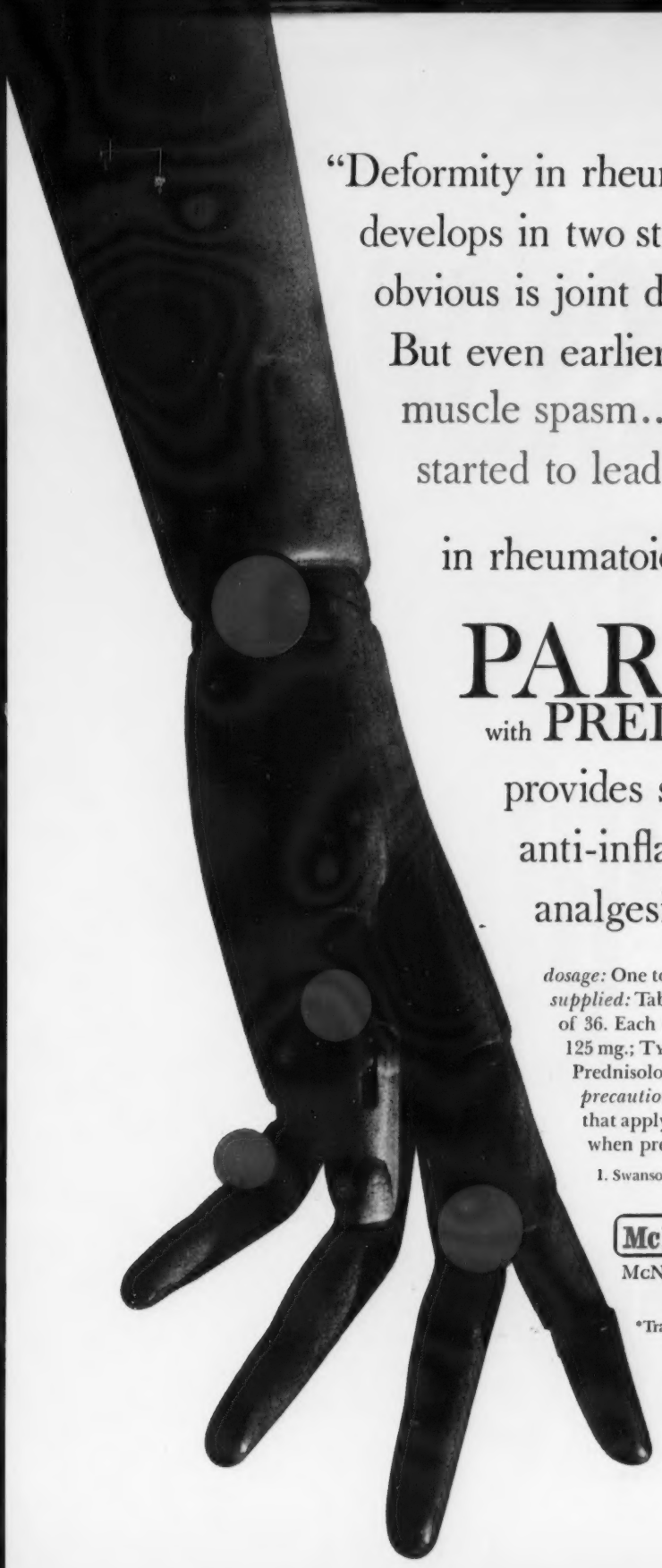
Nitrofurans—a NEW class of antimicrobials—neither antibiotics nor sulfonamides



"Deformity in rheumatoid arthritis develops in two stages. The most obvious is joint destruction. But even earlier... muscle spasm...has insidiously started to lead to deformity."[1]

in rheumatoid arthritis...

PARAFON*
with PREDNISOLONE

provides spasmolytic, anti-inflammatory, and analgesic action

dosage: One to two tablets three or four times a day.
supplied: Tablets, scored, buff colored, bottles of 36. Each tablet contains PARAFLEX® Chlorzoxazone† 125 mg.; TYLENOL® Acetaminophen 300 mg.; and Prednisolone 1.0 mg.
precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing PARAFON WITH PREDNISOLONE.

1. Swanson, J. N.: Canad. M. A. J. *79*:638 (Oct. 15) 1958.

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*Trade-mark †U.S. Patent Pending

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dermatologic ointment

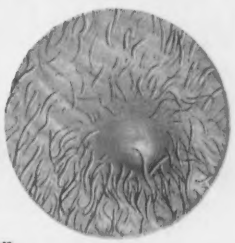
CHYMAR®
ointment

controls inflammation

Corticosteroid Effects

Chymar Ointment reduces burning and itching associated with inflammatory dermatoses, wounds, burns and ulcers . . . keeps the patient more comfortable while the lesions heal . . . helps prevent spread of infection through scratching . . . produces no corticosteroid side effects.

clears infection



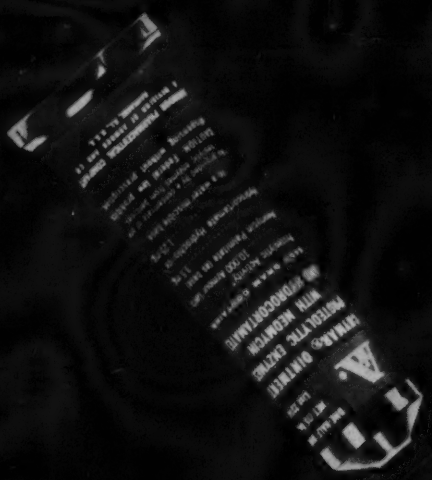
Antibiotic Action

The powerful antibacterial action of neomycin palmitate destroys both gram-negative and gram-positive bacteria and some fungi . . . prevents further bacterial invasion . . . rarely produces bacterial resistance.

cleans the lesion

Proteolytic Activity

Chymar Ointment removes necrotic tissues, crusts and exudates . . . exposes the wound surface to the full effects of the anti-infective and anti-inflammatory agents . . . counteracts odors . . . promotes healing.



Each gram of Chymar Ointment contains:

Proteolytic Activity*	10,000 Armour Units
Neomycin Palmitate (as base)	3.5 mg.
Hydrocortamate HCl	1.25 mg.

In a water-miscible base

*As provided by a concentrate of proteolytic enzymes from pancreas

Available in 1/6 oz. (5 Gm.) and ½ oz. (15 Gm.) tubes

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KANKAKEE, ILLINOIS *Armour Means Protection*

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you can expect
your patients
with low back pain
to return to
normal activity
when you prescribe

Trancopal

case profile no. 2758

A middle-aged man had intermittent low back pain that he attributed to injuries received in an automobile accident three years previously. The pain radiated down both legs, making the patient walk bent over. He also had difficulty getting out of bed and had to pull his knees up and roll out. Any heavy lifting precipitated a new attack, and he tired easily.

Findings on x-ray of the thoracic and lumbar spine gave negative results. Findings from other laboratory studies were within normal limits. A herniated disc, although still a possibility, was temporarily ruled out by the neurologic examination. Previous treatment consisted of analgesics and steroids (without success), and narcotics were given during severe attacks.

Receiving a dosage of Trancopal, 100 mg., three times a day, this patient is able to walk almost normally and carry on his regular activities as long as he does not overexercise. He has been taking Trancopal over seven months with excellent relief of symptoms. No side effects have occurred. *Clinical Report on file at the Department of Medical Research, Winthrop Laboratories.*

INDICATIONS: Musculoskeletal: Low back pain (lumbago, sacroiliac pain); neck pain (torticollis, etc.); bursitis; rheumatoid arthritis; osteoarthritis; disc syndrome; fibrositis; ankle sprain; tennis elbow; myositis; postoperative muscle spasm.

Psychogenic: Anxiety and tension states; dysmenorrhea; premenstrual tension; asthma; angina pectoris; alcoholism.

Dosage: 100 to 200 mg. orally three or four times daily. Relief of symptoms occurs in fifteen to thirty minutes and lasts from four to six hours.

Supplied: Trancopal Caplets® 100 mg. (peach colored, scored), bottles of 100.

Trancopal®

the first true TRANQUILAXANT

Winthrop LABORATORIES • New York 18, New York

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Trancopal (brand of chlormezanone) and Caplets, trademarks reg. U.S. Pat. Off.

NEW

1 mg. Tablets

STELAZINE*

brand of trifluoperazine

For b.i.d. administration

FOR ANXIETY–
PARTICULARLY WHEN EXPRESSED AS APATHY, LISTLESSNESS AND EMOTIONAL FATIGUE

5 SIGNIFICANT ADVANTAGES

*

often effective where other agents fail

*

enthusiastic patient acceptance

*

fast therapeutic response with very low oral doses

*

convenient b.i.d. administration

*

side effects usually slight and transitory

*Trademark

Clinically evaluated, before introduction, in over 12,000 patients

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UNUSUALLY EFFECTIVE IN RELIEVING ANXIETY IN APATHETIC, EMOTIONALLY FATIGUED PATIENTS

'Stelazine' is a new long-acting psychotherapeutic agent that can help you to bring prompt relief to many of your patients whose anxiety is expressed as apathy, listlessness and emotional fatigue.

Clinical studies in over 12,000 patients have shown that 'Stelazine' is outstanding among agents in its class because it not only relieves agitation and tension, but also *restores normal drive* in many patients who are apathetic due to anxiety.

These studies have also shown that 'Stelazine' is effective in low b.i.d. dosage (2 to 4 mg. daily) and that it is often effective in patients who have failed to respond to meprobamate, prochlorperazine, phenobarbital, mepazine, chlorpromazine, or promazine.

RECOVERY OF NORMAL DRIVE IN APATHETIC PATIENTS

Clinicians report that with 'Stelazine' most apathetic, listless and emotionally fatigued patients regain an alert, more confident outlook. This frequently results in increased mental and physical activity. For example:

> Patients' "spirits brightened and initiative and interest picked up considerably in contrast to their pretreatment inertia."[1]
>
> 'Stelazine' "seemed to have a capacity to restore normal drive in conditions characterized by decreased motor activity and mental apathy."[2]

ADDITIONAL INFORMATION will reach you by mail or through your S.K.F. representative. We hope you'll decide that 'Stelazine' deserves an early trial. Smith Kline & French Laboratories, Philadelphia.

REFERENCES: 1. Gearren, J.B.: Dis. Nerv. System *20*:66 (Feb.) 1959. 2. Margolis, E.J., et al.: Scientific Exhibit at 12th Clinical Meeting of the American Medical Association, Minneapolis, Dec. 2-5, 1958. 3. Phillips, F.J., and Shoemaker, D.M.: *ibid.* 4. Ayd, F.J., Jr.: Clin. Med. *6*:387 (Mar.) 1959. 5. Tedeschi, D.H., et al.: in *Trifluoperazine: Clinical and Pharmacological Aspects*, Philadelphia, Lea & Febiger, 1958, pp. 23-33.

leaders in psychopharmaceutical research

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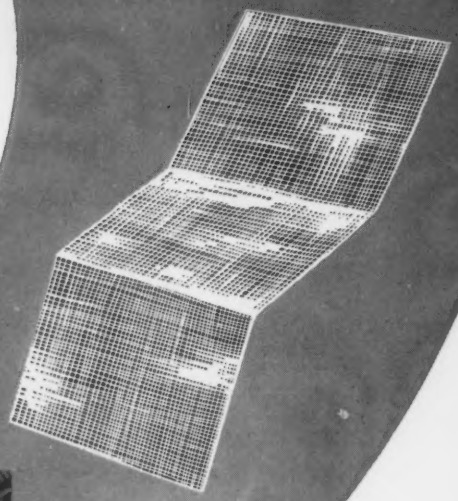
The NEW DUAL PURPOSE



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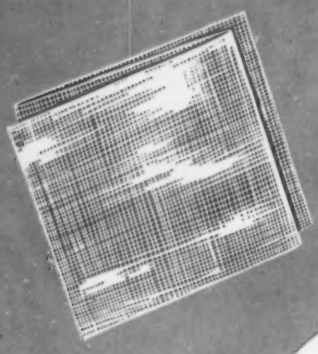
PETROLATUM GAUZE U. S. P.
STERILE
3 x 3 PAD, opens to 3 x 9 INCHES
UNOPENED ENVELOPE MAY BE AUTOCLAVED OR COLD SOAKED
TEAR HERE

3″ x 9″ STRIP

Shorter length ends waste on small area wounds. New Z-fold insures perfect graft takes. Guaranteed sterile at time of use.



3″ x 3″ PAD

Three-ply, fine-mesh gauze, lightly impregnated — for use in physician's office, industrial medical department, first aid.

6th SIZE of VASELINE® PETROLATUM GAUZE

Now supplied in:

1/2″x 72″	3″x 18″
1″x 36″	3″x 36″
3″x 3″/ 3″x 9″	6″x 36″

Sole Maker:

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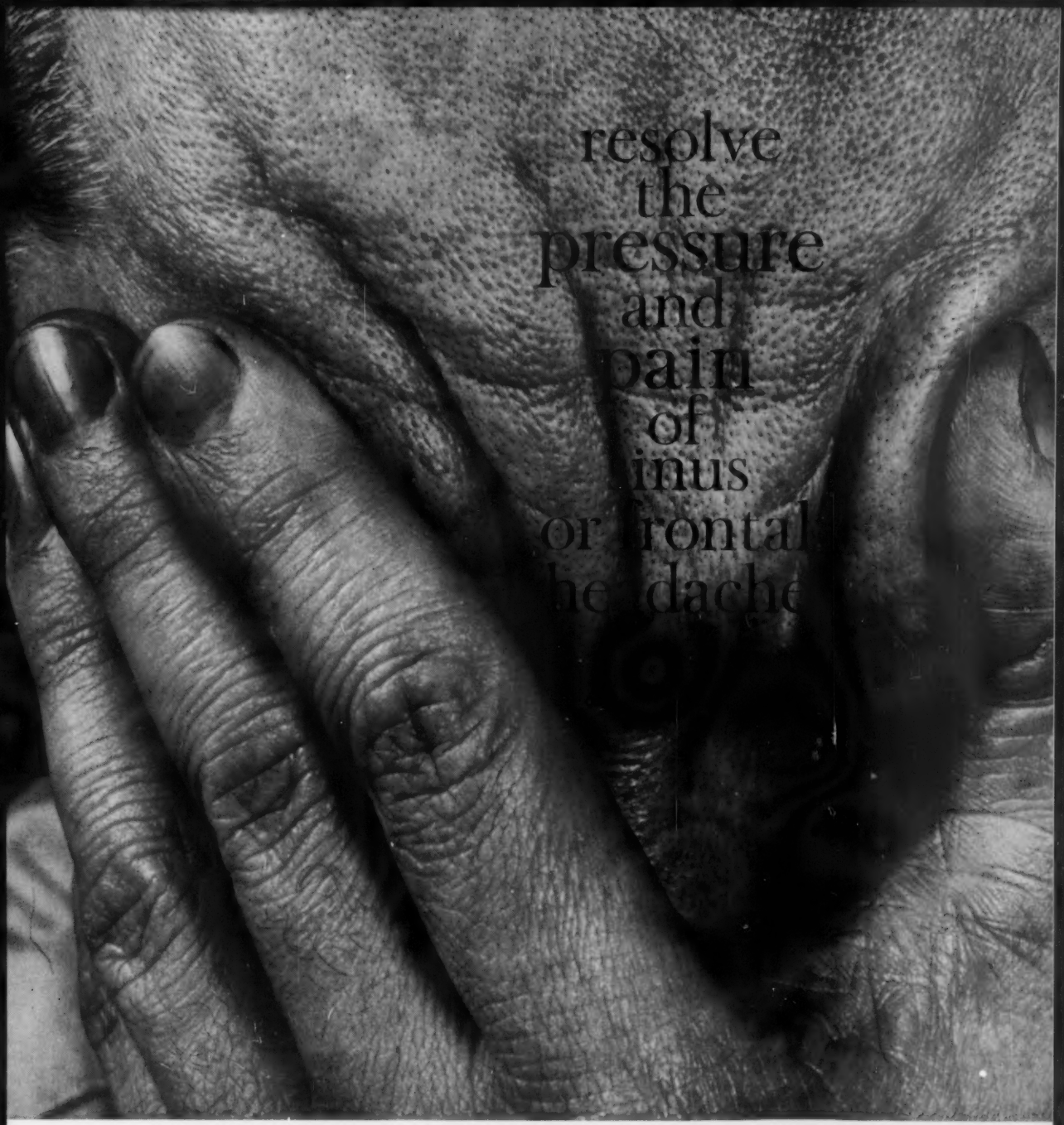

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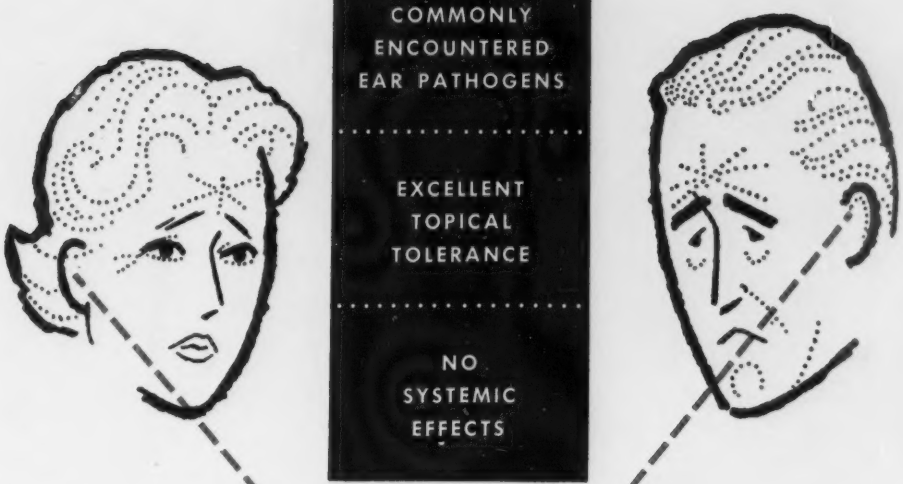

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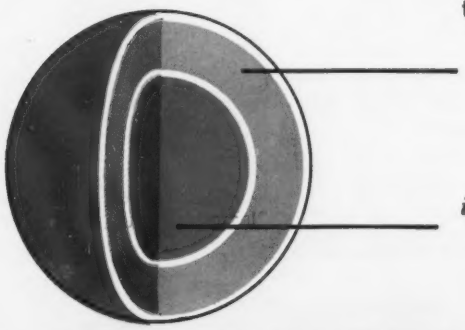

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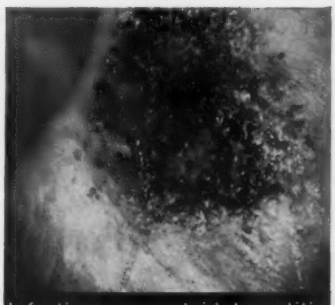

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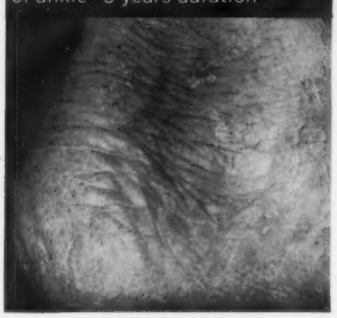

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References: 1. Shelmire, J.B., Jr.: Monographs on Therapy 3:164 (Nov.) 1958. • 2. Nix, T.E., Jr., and Derbes, V.J.: Monographs on Therapy 3:123 (Nov.) 1958. • 3. Robinson, R.C.V.: Bull. School of Med., U. Maryland 43:54 (July) 1958. • 4. Sternberg, T.H.: Newcomer, V.D., and Reisner, R.M.: Monographs on Therapy 3:115 (Nov.) 1958. • 5. Clark, R.F., and Hallett, J.J.: Monographs on Therapy, 3:153 (Nov.) 1958. • 6. Smith J.G., Jr.; Zawisza, R.J., and Blank, H.: Monographs on Therapy, 3:111 (Nov.) 1958. • 7. Monographs on Therapy, 3:137 (Nov.) 1958. • 8. Howell, C.M., Jr.: North Carolina M.J. 19:449 (Oct.) 1958. • 9. Bereston, E.S.: South. M.J. 50:547 (April) 1957.

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SOMA often makes possible reduction or elimination of steroids, salicylates, sedatives and narcotics.

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EASY TO USE. Usual adult dose is one 350 mg. tablet 3 times daily and at bedtime.

SUPPLIED: Bottles of 50 white sugar-coated 350 mg. tablets.

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IMS

LITIGATION BREEDERS

In Industrial Practice

• J. L. BARRITT, M.D.
Medical Director
Industrial Accident Commission
Department of Industrial Relations
State of California

Early diagnosis by the industrial physician and his realization of the potential dangers of certain conditions will minimize controversy and litigation.

Controversy in Workmen's Compensation Procedure is costly to employee and employer alike. With the exception of attorneys who "profit by the fruits of litigation," no one benefits. Settlements are delayed for months or years and the employer is saddled with legal expense which may outweigh the compensation benefits originally claimed. Meanwhile the industrial surgeon wastes his time in profitless correspondence and testimony.

Under certain circumstances any industrial injury may result in controversy and litigation. There are, however, certain types of injury that cause far more than their share of trouble. Some of these "litigation breeders" are conditions in which the etiology or pathology are obscure and the relationship to employment may be at times debatable. Some are conditions which by their very nature tend to merge with and overlap nonindustrial ailments.

Some of these injuries involve special fields of medicine and I do not claim to have any solution for their special problems. These conditions are, however, first seen by industrial surgeons who must be able to recognize them and to direct their early treatment. I feel that in some cases these men may be slow to realize their potential dangers. Some of the medical aspects of these injuries are so vague and indefinite that once controversy begins the scene is set for a veritable field day for lawyers.

With these thoughts in mind I would like to point out and describe some of the conditions that are frequent trouble makers.

Aggravation of Arthritis

Any severe injury to a patient who has advanced arthritic changes is apt to end in litigation. The bone of contention is usually a difference of opinion regarding the percentage of residual disability due to injury and the percentage due to arthritis. Without the preexisting arthritis the disability would have been minimal. On the other hand, many patients with advanced

arthritic changes work on for years without even knowing that they have the disease. It is difficult to make an apportionment of disability that is fair to both the employee and the employer. Laws in different states vary considerably in the way they deal with this problem.

While controversy may be unavoidable, the resulting disability may in some cases be lessened. It is generally agreed that any type of surgery which requires prolonged immobilization is dangerous in these cases. Strangely enough some surgeons and orthopedists seem consistently to forget this. The patient and the insurance carrier are casually informed that surgery is necessary. Nothing is said about arthritis and a cheerful prognosis is given. Many months after surgery the patient's disability is found to be greater than before surgery. Then and only then is the patient and the insurance carrier informed that complicating arthritis is the cause. In many of these cases conservative treatment and an early return to some form of light work would have saved both the patient and the employer considerable money. Litigation is common in these cases.

Fracture of the Navicular Bone

Anterior and lateral x-ray views taken immediately after fracture of the scaphoid bone in the wrist frequently fail to demonstrate a fracture that is actually present. In these cases the patient is sometimes informed that he has only a sprain. He is given an elastic bandage and allowed to return to work. The patient continues to complain of pain, but as his x-ray examination was reported as "negative" his complaints are not always taken seriously.

Many months later a second set of x-rays, perhaps taken by another doctor, may reveal a fracture and considerable deossification of bone. It is difficult to determine at this late date just when the fracture did occur.

Additional x-ray views, taken in oblique planes are always advisable in wrist injury cases. In addition, these injuries should be watched closely during the first few weeks. Delay in proper treatment almost invariably results in a very unhappy patient.

The Reflex Dystrophy Group

This is a group of disorders in which the findings are often vague and indefinite. Medicolegal factors are frequently involved and any one of the group can plague the soul of the industrial surgeon. In all of these conditions a painful local lesion apparently initiates a reflex arc, probably by way of sympathetic pathways. The pain itself brings on vasospasm which in turn brings on more pain, thus maintaining a vicious circle.[2]

These conditions are not always definite clinical entities, but tend to overlap one another. However, they all depend on the basic reflex arc disturbance. Each, however, has some individual characteristics of its own.[3]

Typical early symptoms and findings of this group include pain, swelling, edema, vasospasm, hyperesthesia and paresthesia. The symptoms are always out of proportion to the original trauma which has frequently consisted of a painful sprain, crush or infection. In the early stages, when pain and edema predominate, there is immobilization owing to pain and swelling. The immobilization in the presence of high protein edema fluid gives rise at a later date to fibrosis, joint stiffness and deformity.[2]

Causalgia

This is a type of reflex dystrophy in which pain is the predominant factor. This may be so excruciating that the patient will not even allow the examiner to touch the injured member. The pain usually more or less closely follows the course of either the median or the sciatic nerves.

Sudeck's Atrophy

The basic symptoms and findings of the group are usually present, but in this condition it is osteoporosis that predominates. Pain and edema are early symptoms and findings. Fibrosis, joint stiffness and deformity are frequent residuals. This type of dystrophy seems to be more apt to follow painful unsplinted injuries.

Shoulder-Hand Syndrome

This condition may involve either the shoulder alone or the hand as well.[3] There are a number of conditions which may initiate the reflex arc. On the other hand, no definite causative factor may ever be found. Trauma is a common, but by no means the only cause. Steinbocker[21] reports a series of 42 cases, nine of which followed myocardial infarction. Other causes include trauma and hemiplegia.

Shoulder-hand syndrome may simulate arthritis or bursitis of the shoulder. When the condition develops in an arthritic individual following trauma, the evaluation of the industrial aspects may be almost impossible.

The symptoms and findings of reflex dystrophy are frequently vague and tend to merge with nonindustrial ailments. The hyperesthesia may appear to be glove like, but this does not necessarily mean that the hysteria is primary.[2] However, these conditions do tend to occur in emotionally unstable individuals and this only tends to increase the surgeon's difficulty.

A surgeon treating one of these cases, and recognizing the patient's neurotic makeup, may

underrate the symptoms. Regardless of the psychogenic aspects involved, the conditions are very real and lead to severe permanent disability in the form of joint stiffness and deformity. Early recognition may enable the surgeon to limit some of the edema that otherwise leads to fibrosis. Interruption of the reflex arc by sympathetic block is usually tried.[12] Sympathectomy usually is a last resort.

No matter how trivial the original injury may have been, once reflex dystrophy has developed the prognosis should be guarded.

Tenosynovitis

In any gripping action, the extensors of the hand and the wrist must be fixed before the flexors can exert any gripping power. The fact that the extensor tendons are weaker than the flexors probably accounts for the fact that in many industrial injuries it is the extensor tendons that are involved rather than the flexors. Tenosynovitis of the extensor tendons of the hand and wrist is a common and frequently undiagnosed industrial injury.

The trouble begins when the surgeon fails to recognize the seriousness of the condition. There are seldom any early objective findings and the patient's complaints may not be taken very seriously. He is often allowed to return to the very work that brought on the condition. This is always unfortunate, as immediate removal from the offending activity usually results in a quick cure. Quite often a diagnosis of arthritis or neuritis is made.[9]

The seeds of litigation are sown when the patient is told that his condition is not an industrial one and that he must look to someone other than the employer for his further treatment. By the time objective findings are unmistakably present and some other doctor has made the diagnosis, it is too late to prevent prolonged disability and resentment.

Diagnosis depends primarily on symptoms which have developed following some excessive gripping action or prolonged light repetitive motions. Many cases occur in women who usually give the history that they "drop things." The patient complains of pain when the offending tendon is put on a stretch. If the abductor policis longus and extensor policis brevis are involved, Finkelstein's test[11] is of great value. In this test the patient clenches his fist over his thumb while the examiner simultaneously forces the wrist sharply into ulnar deviation. The sudden cry of pain is practically diagnostic.

Treatment consists primarily of removing the patient from the work which caused the condition. If this is not done other treatment is almost useless. Frequently the patient is allowed to return to work too early and repeated cycles of work and disability follow. Immobilization in a cast will clear up some cases. If the condition has persisted several months, surgical splitting of the sheath should be considered.[9,11] Heat and diathermy often seem to do harm rather than good.

While industrial tenosynovitis usually involves the hand and wrist, involvement of the sheath of the peroneal tendon sometimes follows ankle injuries. These cases are not common but usually have severe disability until someone finally makes the diagnosis. A painful localized swelling just behind and below the lateral maleolus usually is present.[16]

Whiplash Injury

The term whiplash injury is applied to a type of injury that is a result of violent hyperextension of the cervical spine followed by violent flexion. The term has become very popular with attorneys and the public. Many trivial cervical sprains are spoken of as whiplash injury and fantastic claims of disability are sometimes made. On the other hand many physicians seem to be a little too prone to consider every patient who claims whiplash injury a malingerer.

Typical symptoms include neck pain and stiffness and pain radiating to the frontal region and the eyes.[10] These symptoms may be associated with dizziness and vague vasomotor phenomena. The symptoms are often bizarre and impossible to explain. They do, however, form a very definite and consistent pattern which is evident to anyone who sees large numbers of these cases. Usually there are no objective findings, although muscle spasm may be present. The question often arises of whether the patient actually is disabled and litigation is common.

All the spinal nerves, except the first and second cervical, pass out from the cord through intervertebral foramen and are more or less protected from injury. Since the nerves of the first and second cervical pass out directly between the atlas and the skull and the atlas and the axis, they would seem to be somewhat vulnerable to injury. The posterior ramus of the second cervical nerve continues out through the muscles of the neck to become the greater occipital nerve. Symptoms referable to the greater occipital nerve are common after whiplash injury.

The anterior rami of the first, second, third and fourth cervical nerves make up the cervical plexus.[4,6] Each fiber connects with the cervical sympathetic ganglion by way of the gray rami. Deep branches connect with the vagus and hypoglossal nerves, and vasomotor fibers extend to the internal and external carotid arteries. Pierre Pizon[18] has stated that even slight trauma

to the cervical region may bring about changes in blood vessels, especially the vertebral artery. He expresses the belief that the vertebral artery is exposed to "stretch" syndrome produced by irritation of the sympathetic nerves.

It is probable that the term "whiplash" as is commonly used is a misused term and includes a number of different conditions. It seems likely, however, that there is a pathological basis for many of the bizarre symptoms that occur.

Whiplash injury may be confused with arthritis of the cervical spine or with injury to the intervertebral discs. The advice of a neurologist is usually indicated. These cases seem to clear up eventually with little or no disability, but in the meantime they often present difficult medicolegal problems.

Fracture of Transverse Process of the Vertebrae

There would seem to be no reason why an uncomplicated fracture of a transverse process should cause any significant disability or present any medicolegal problem. Frequently however, the combination of such a fracture and an emotionally unstable patient will spell trouble. The injury in its early stages is painful and to the patient's mind, he has a "broken back." This combination in the hands of a tactless surgeon may result in considerable disability and controversy.

Many rugged individuals will overlook the pain and go on with their regular work. In an emotionally unstable patient, a short period of bed rest may be advisable. This may get the patient successfully past the painful period and back to work almost on schedule.

Acoustic Trauma

Hearing loss from noise is becoming more and more an industrial problem. Noise produces a nerve type deafness and damage first occurs in the high frequency ranges of the sound spectrum. A history of noise exposure together with an audiogram showing a drop at the 4,000 cycles per second level is suggestive of acoustic trauma. Hearing loss which results from the aging process also involves the high frequency ranges. Litigation is common.

If the patient has had a pre-employment audiogram the evaluation of the employer's responsibility is simplified. Pre-employment audiograms should be made whenever there is a dangerous noise exposure.

Acute Coronary Occlusion

There are two very different schools of thought regarding the relationship of acute coronary occlusion, or infarction, to exertion and strain. Most authorities agree that the majority of acute coronary attacks are a result of a natural progression of coronary disease.[5,7,8,15] Many believe, however, that in some cases exertion and strain may precipitate an attack.[1,5,17,19,20,22] A few doctors seem to feel that exertion and strain play little or no part in acute coronary occlusion or myocardial infarction.[13,14] It is doubtful, however, if even one of these doctors would advise one of their own patients with advanced coronary disease to go out and do strenuous work.

Attorneys for injured workmen and employers alike soon become very adept in choosing internists and cardiologists, whose opinions, while perfectly honestly given, do nevertheless support their clients' contentions.

The picture of a workman collapsing from a heart attack during strenuous work is very impressive to the lay or judicial mind. Courts and boards in many cases seem to ignore the fact that one heart case is different from any other heart case. They seem inclined to oversimplify the medical problems involved and base their decisions on the time relationship and on the precedents of other heart case decisions.

In cases in which litigation begins months or even years after the attack, the details of events immediately preceding the attack are usually vague. The more complete and exact the history in these cases the more nearly correct will be the final evaluation. Autopsy findings are, of course, helpful.

Restriction on the hiring of cardiacs will not solve the industrial heart problem. While there has been a great deal of concern among employers as to the risk involved in hiring cardiacs, actually the number of claims in most jurisdictions has been many less than were anticipated. The majority of those who have claimed compensable heart injury have been those who had a supposedly normal heart. A well managed job placement program based on accurate and complete medical examination is certainly advisable. In this way the services of many highly skilled workers may be retained. In the event cardiac injury is claimed, the adjudicating board or commission will have sound data on which to base apportionment.

Summary

Once the regular routine progression of an industrial case from injury to recovery or settlement is interfered with, the door is open for litigation. The injuries described are sources of controversy out of proportion to their numerical frequency. Some of these "litigation breeders" simulate other conditions. Some tend to merge with and overlap nonindustrial ailments so that segregation of the disability resulting from each is almost impossible. The fact that many of these conditions flourish only in a climate of

emotional instability does not lessen the surgeon's responsibilty in many of these cases, and early diagnosis and a realization of the dangers involved will minimize controversy and litigation.

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Mrs. Fingold and the Law

The late Massachusetts Attorney General George Fingold, an able public servant, died suddenly of a heart attack in 1958 just as he was about to start his election campaign for governor. He had been working hard on the Old Colony Railroad case when he collapsed. His widow petitioned for a pension, claiming that her husband's death resulted from his duties as an official of the commonwealth. Two physicians testified before the state retirement board in favor of the pension, holding that Mr. Fingold's death was due to tensions in the Old Colony case.

The retirement board has just denied Mrs. Fingold's plea. She plans to appeal.

It may be that if the Fingold case were isolated and considered wholly on its merits there would be justification for ruling that medical science does not present substantial evidence that Mr. Fingold's fatal attack was directly related to the performance of his duties. But when you consider the retirement board's ruling in this case against the whole background of the so-called "heart law" as it is administered, you find at once just cause to be angry.

The "heart law" should be repealed, but so long as it is on the statute books, the retirement board's ruling on Mrs. Fingold's application makes a grotesque travesty on justice. The "heart law" stipulates that whenever any public employee in the commonwealth in certain specified categories develops heart disease or hypertension the ailment is presumed as a matter of law to have resulted from his performances of duty; and he is entitled to disability retirement at two-thirds of his pay, plus additional benefits for his wife and dependents.

At first only firefighters were covered by the heart law; but it was soon extended to cover police, airport crash firemen, registry personnel, prison guards. So numerous have been the bills to extend the coverage to other categories that it has been difficult to keep track of who is now eligible.

The ultimate was reached when a bill proposed that all employees of the state, counties, cities and towns be covered by the heart law which would mean that any public employee contracting heart disease could claim disability as the result of his duties.

There is no evidence to prove that in any category of public employees heart disease or hypertension can be presumed to result from performance of ordinary duties. How ridiculous the heart law is can be cited in cases where a public employee would retire on high disability pension because of heart disease due to his work and then take more strenuous work to supplement his pension payments.

The lowliest law enforcement officer in the state who may have served years in a sedentary job sitting at a desk can be retired on disability pension when his heart trouble is presumed to have been caused by his duties. Yet the highest law enforcement officer in the commonwealth, the attorney general, dies of a heart attack in the midst of a strenuous railroad case protecting the rights and interests of the citizens — and the retirement board rules his widow is ineligible. Such gross inequalities and injustices eat away at the confidence of the people in their government — and the whole scandalous pension system, including the heart law, not only undermines the faith of the people but also wastes annually millions and millions of the people's tax money. —*Fitchburg* (Mass.) *Sentinel*, July 2, 1959.

Symposium . . .

PERIPHERAL VASCULAR DISEASES

- DAVID I. ABRAMSON, M.D., Moderator
  Department of Physical Medicine and Rehabilitation
  University of Illinois College of Medicine
- PETER BEACONSFIELD, M.D.
  Department of Surgery, Chicago Medical School
- WILLIAM S. DYE, JR., M.D., and
- JOHN H. OLWIN, M.D.
  Department of Surgery
  University of Illinois College of Medicine

DAVID I. ABRAMSON, M.D. (MODERATOR): This panel proposes to discuss various problems in the field of peripheral vascular diseases, a subject with which I am sure all of you have had some contact. The Panel consists of JOHN H. OLWIN, M.D., Associate Professor of Surgery, University of Illinois College of Medicine, Associate Attending Surgeon, Presbyterian-St. Luke's Hospital, and Attending Surgeon (Vascular), Veterans Administration Hospital (Hines); PETER BEACONSFIELD, M.D., Assistant Professor of Surgery, Chicago Medical School, Associate Attending Surgeon, Cook County Hospital and Surgeon of the New York Central System and Commonwealth Edison Company; and WILLIAM S. DYE, JR., M.D., Clinical Associate Professor of Surgery, University of Illinois College of Medicine, Attending Surgeon, Veterans Administration Hospital (Hines) and Associate Attending Surgeon, Presbyterian-St. Luke's Hospital. I am an internist and numerically at a disadvantage. However, as Moderator of this Panel, I have certain advantages which I shall use to make up for this inequality.

Classification of Vascular Disorders

ABRAMSON: Vascular diseases can roughly be divided into several categories, depending upon the site and type of the existing pathologic process. However, it is necessary to point out that a clinical entity may demonstrate changes in more than one part of the vascular tree, as for example, the involvement of both veins and arteries seen in thromboangiitis obliterans (Buerger's disease). Nevertheless, in general, it is possible to make a loose grouping of the various conditions on the basis of the location of the predominant alteration in either the arteries, the veins or the lymphatics.

The arterial vascular disorders can be subdivided into two groups: functional vascular diseases, in which the alterations in size of vessels are reversible, and organic or structural vascular disorders, in which permanent and irreversible changes have occurred in the wall of the arteries. In the last category fall such clinical entities as arteriosclerosis obliterans, thromboangiitis obliterans, and a group of conditions associated with trauma to blood vessels.

This period will be devoted to a discussion of the treatment of chronic occlusive arterial vascular disorders, since these are the most common diseases affecting the arterial tree. Both medical and surgical procedures will be presented, as well as the local care of the feet.

Therapy of Chronic Occlusive Arterial Vascular Disorders — Abstinence from Smoking

ABRAMSON: One of the questions which frequently arises in this field is whether the patient with an arterial insufficiency of the extremities should stop smoking. I should like to obtain Dr. Olwin's opinion on this matter, first with regard to thromboangiitis obliterans.

JOHN H. OLWIN, M.D.: I feel that if the Panel will agree on any one subject, it is on this one. As a rule, thromboangiitis obliterans occurs in individuals who smoke heavily. Although certain other etiologic factors have been proposed, probably the one that is most important is smoking. Moreover, any apparent cures that have occurred in patients with this disorder have been noted in those who abstain from smoking.

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Therefore, the answer to the question is that the patient with thromboangiitis obliterans should stop smoking. Most peripheral vascular surgeons will not treat an individual with this disorder who does not indicate at least a willingness to do his very best to achieve such an aim. Furthermore, it is necessary to emphasize that tobacco in any form — snuff, chewing tobacco or smoking — should be eliminated. Nor is the fact that a patient does not inhale the smoke of importance.

ABRAMSON: From my experience, it would seem that patients with thromboangiitis obliterans manifest almost a sensitivity reaction to smoking, and I firmly believe that in most instances progression of the disease will be noted if this habit is continued.

I should like to ask Dr. Olwin whether he believes that the deleterious effects of smoking are as apparent in the case of arteriosclerosis obliterans as in thromboangiitis obliterans.

OLWIN: I would answer in the negative. It has been shown that there is a definite amount of vascular spasm which results from even a single puff of a cigarette, and from this point of view, the patient with arteriosclerosis obliterans would be benefited by the elimination of such a possibility. However, no marked response to smoking is noted in this disorder.

ABRAMSON: I will not bother to ask the other members of the Panel their opinion on smoking, since I am certain that it is similar to that expressed by Dr. Olwin.

Physical Activity

ABRAMSON: We now come to a discussion of a symptom which is frequently experienced by the patient with chronic arterial insufficiency of the lower extremities and which limits his ability to perform his daily chores — intermittent claudication. I should like to ask Dr. Dye to present briefly the pathogenesis of this complaint.

WILLIAM DYE, M.D.: Intermittent claudication is ascribed to an inadequate blood supply to exercising muscles. It does not occur at rest because the need for oxygen is much less under these circumstances and the existing blood supply is able to satisfy tissue requirements.

ABRAMSON: It can be stated, then, that intermittent claudication is a pain which may be experienced in any group or groups of muscles in the extremities during a period of physical activity. It disappears soon after the exercise is terminated and its severity and duration are directly related to the magnitude of the work load. Its presence indicates an inability of the local vascular mechanisms in the muscles to satisfy the transient but marked increase in metabolic needs of these tissues during a period of exercise.

I should like now to ask Dr. Beaconsfield a question about which patients with occlusive arterial vascular diseases are frequently confused; that is, how far should they walk? Should they continue doing so until they exceed their ability and, as a result, experience pain in the exercising muscles, or should they limit their walking to the point of almost becoming invalids?

PETER BEACONSFIELD, M.D.: The patient who experiences intermittent claudication should continue walking as long as he is reasonably comfortable. He should do the amount that is necessary for daily activities and should not attempt to decrease his physical activity.

ABRAMSON: Is there any advantage in having the patient walk beyond his limit, on the basis that placing a load on the vascular tree will stimulate the growth of collaterals?

BEACONSFIELD: I do not think so in the case of arteriosclerosis, for this reason: by the time the patient sees a physician because of pain on walking, most of his collateral vessels have already developed, and therefore there would be no advantage in placing a load on the vascular tree in order to stimulate further growth. It must also be borne in mind that the patient will stop walking when he begins to experience severe pain, regardless of what the physician tells him to do under these circumstances.

ABRAMSON: I should like to ask Dr. Beaconsfield whether there is any difference in the time of onset of intermittent claudication in the case of thromboangiitis obliterans and arteriosclerosis obliterans.

BEACONSFIELD: Generally the symptoms associated with walking occur early in the case of thromboangiitis obliterans and rather late in arteriosclerosis obliterans.

ABRAMSON: Dr. Dye, if the patient suffering from intermittent claudication also developed an ulcer on the foot, what would be your advice regarding physical activity?

DYE: I am not a believer in total bed rest for patients with trophic changes, but I do feel that this approach has been downgraded too much. There has been a great tendency on the part of the physician to ask the patient with some type of trophic change to walk to extremes, in order to stimulate circulation, an attitude which I do not think is reasonable. My own belief is that in the presence of an active, painful ischemic lesion, a certain amount of bed rest is a more practical approach to the problem than is ambulation of the patient.

ABRAMSON: I have had the experience on several occasions of taking care of patients with long-standing arteriosclerosis obliterans but no signs of trophic changes who developed myocardial infarction, in the course of which they

began to show signs of gangrene and ulceration of the involved extremities. There was little question that the prolonged period of bed rest, producing a drop in blood pressure, as well as the fall that occurred in association with the myocardial infarction, was responsible for the change in the peripheral circulation. It is generally accepted that reducing the pressure in vessels that are narrowed will be conducive to the formation of a local thrombus and further marked reduction in circulation. In view of such a possibility, might it not be a dangerous procedure to place the patient at bed rest for the treatment of an ulcer of the foot, since the resulting drop in blood pressure might cause a greater reduction in circulation and, hence, further spread of the trophic change?

DYE: I think that this is a definite possibility and certainly should be considered in the overall treatment of an ulcer or gangrene. However, at the same time that the patient is at bed rest other procedures should be carried out in an attempt to restore or increase blood flow. For example, he should be investigated from the point of view of determining whether he is a proper candidate for some type of grafting procedure. He should also receive various medications which may increase skin circulation.

Local Care of the Feet

ABRAMSON: We now come to a discussion of a very important part of the treatment of the patients with chronic occlusive vascular disorders, the local care of the feet. Since this part of the regimen is chiefly the responsibility of the patient, it is the duty of the physician to explain in detail the reason for the various measures and the possible serious consequences of neglecting them. A printed or mimeographed list of directions may facilitate care and help the patient remember his role in the problem. I should like to ask Dr. Olwin what advice he gives his patients in regard to this subject.

OLWIN: First, the patient should be warned to be very careful about sustaining an injury to his feet. For example, when he gets out of bed at night he should put on a hard-soled shoe and not a bedroom slipper so as to prevent any trauma, as by accidentally kicking the edge of the bed. At no time should the patient walk around in bare feet. He should keep his lower extremities clean, washing them once or twice a day with a mild soap. He should be very careful about trimming his toenails. He should cut them straight across and even notch them a little to prevent the nail from growing into the skin. Not infrequently I take care of this matter myself when the patient visits me in the office. I also warn the patient about the possibility of acquiring dermatophytosis. In order to prevent this, I generally suggest that he use a mild dusting powder placed between the toes every morning. This step also reduces the untoward effects of perspiration.

It must also be emphasized to the patient that despite the fact that his feet may be cold, he is never to apply any type of concentrated heat to them, such as hot water bottles, heating pads or heating lamps. It should be explained to him that contact of his limbs with a temperature that is much higher than body temperature will cause an increased metabolic demand of the tissues, and at the same time the blood supply necessary to take care of this greater requirement is not forthcoming. This may result in the formation of a burn. This matter should be particularly emphasized in the case of the diabetic patient, who may have a certain amount of peripheral neuritis, with a resulting loss in sensation in the foot.

ABRAMSON: Another point that should be mentioned with regard to heat is that normally when this agent is applied to the extremity there is an increase in blood flow which actually acts as a cooling system to remove some of the heat. However, when dealing with an impaired arterial circulation this mechanism is ineffective, and consequently the poorly viable tissues are exposed to the full effect of the heat, which may result in their destruction.

Indications for Conservative Therapy

ABRAMSON: The presence of certain physical findings in the foot suffering from a trophic disturbance will frequently give support to the physician's belief that continuation of a conservative approach to therapy is justified. I should like to ask Dr. Dye to discuss this point, with particular reference to the patient with diabetes.

DYE: The contribution of diabetes is an increased vulnerability of the ulcer or gangrene to infection. If this occurs, the associated signs of inflammation alter the appearance of the lesion, making it look much more serious than it actually is. The reason for a more optimistic point of view is that generally the inflammatory process can be controlled by the use of appropriate antibiotics, bed rest and drainage of an existing abscess. On the other hand, if the changes are due entirely to irreversible destruction of tissue, resulting from a markedly impaired local circulation, the prognosis is much worse. An important point of differentiation is the temperature of the foot. If it is warm it may mean that there is enough local circulation to produce inflammatory reaction and, hence, to control the process and possibly to save the limb.

ABRAMSON: Are there any other findings in

the foot that are of prognostic import?

DYE: Sweating is a valuable sign. It indicates that there is enough circulation to the sweat glands to permit normal function. Hair growth is also important. The presence of hair on the toes would make me hesitate to amputate the limb.

Use of Anticoagulants

ABRAMSON: Dr. Olwin, besides the treatment already suggested for the patient with an ulcer necessitating bed rest, are there any other therapeutic approaches of value in such a situation?

OLWIN: I feel that of importance in this regard is the use of anticoagulants. It is generally accepted that blood flowing slowly through vessels may become sludged and that anticoagulants reduce this reaction materially. By increasing the fluidity of the blood, the rate of blood flow through the tissues may likewise be augmented. In the presence of ulceration this would be of great benefit. I have had a number of cases in which ulcers were present on the heel, a site which is associated with a very poor prognosis as far as success with therapy is concerned, and on several occasions the use of anticoagulants has resulted in complete healing of the lesion. My associates and I have also noticed that some of our patients on anticoagulants are able to walk a little further. Although at first we thought that this improvement was on the basis of a psychic reaction to the therapy, there is some evidence to indicate that there is actually an increase in tolerance to exercise under such circumstances.

It is a good possibility that the use of anticoagulants helps prevent progression of the pathologic process in the sense that it slows down the final closure of the smaller vessels by local thrombosis. There is also a possibility that any existing abnormal clotting mechanism can be neutralized to some extent by the use of anticoagulants. I have had some of my patients on this type of medication for more than five years, and it is my feeling that progression occurred at a much slower rate in them than in the untreated individuals. However, I cannot reach any definite conclusion at present on the basis of the available evidence.

ABRAMSON: I agree with Dr. Olwin that one should be very cautious in attributing improvement only to the treatment program, particularly in the case of long-term therapy. We have all had the experience of patients increasing their walking ability with no therapy other than local care of the feet. It is my feeling that spontaneous improvement in the clinical condition may occur if the rate of formation of collaterals is greater than the rate of occlusion of the main vessels by the pathologic process. Recently I received a paper from a Dr. Raymond Penneys of the University of Pennsylvania, who studied 55 untreated patients with arteriosclerosis obliterans over a period of a number of years. Many of these demonstrated an increase in walking ability. I realize that it would be very difficult to prove that such a change is due to a more efficient collateral circulation since this cannot be studied clinically. Regardless of the basis, I am convinced that spontaneous improvement can occur in patients with arteriosclerosis obliterans. The same holds true for individuals with thromboangiitis obliterans if they stop smoking.

Dr. Olwin, to return to the subject of anticoagulants, I should like to ask you to define the general scope of the treatment. For example, would you use anticoagulants for individuals at bed rest only or also for those who are potential candidates for arterial thrombosis but are ambulatory?

OLWIN: I would use such a regimen on patients with extensive arteriosclerosis, regardless of whether they are at bed rest or walking around. I would place them on long-term anticoagulant therapy, performing prothrombin time every two weeks. Of course, it is understood that this is done only if there is no contraindication to the use of such a medication.

ABRAMSON: Following your view to its logical conclusion, we would have to have a large proportion of our patients on anticoagulants. To me, this does not sound like a practical method of dealing with the problem. Dr. Dye, would you agree with Dr. Olwin?

DYE: In principle, I would agree wholeheartedly. However, I am well aware of the difficulty and dangers of placing large numbers of patients on long-range treatment programs, particularly if adequate follow-up tests are not utilized. Of course, in the hand of Dr. Olwin, who has the advantage of an excellent laboratory and is able to see his patients frequently, the various pitfalls are minimized.

Vasodilators

ABRAMSON: We have a question that has to do with the value of alcohol as an adjunct in the treatment of peripheral vascular disorders. It is my feeling that alcohol produces a certain amount of vasodilatation of the cutaneous vessels. It is doubtful that it has any effect upon muscle circulation. Therefore, if there is any place for such therapy in the treatment program it would be in the case of ulcers of the skin rather than for intermittent claudication. However, before suggesting its use, even in moderate amounts, it is necessary to find out whether the patient has imbibed large quantities in the past. Under these circumstances, it would be inadvisable to suggest routine use of alcohol

as treatment, for obvious reasons. I believe that the Panel agrees with this point of view concerning the efficacy of alcohol.

The next question has to do with the various so-called vasodilator drugs. Many of these have been advocated with much enthusiasm, only to be discarded in a short time because of lack of benefit from their use. The ones that have received the most extensive clinical trial are Priscoline, Ilidar and nicotinic acid. My feeling is that they have a limited use in the case of the patient with chronic arterial vascular disease who has no cutaneous manifestations. Since most of them are sympathetic blocking agents they will have little or no effect upon the muscle circulation and hence are of little or no value in the treatment of intermittent claudication. Arlidin has been advocated for this purpose, but there is still no clear-cut proof, at least clinically, for the view that an increase in walking distance follows the administration of this medication.

It would seem then that most of the medications that are at present available for peripheral vascular disorders have a limited use. Rarely do they have any effect upon altering claudication distance, the main basis for their administration being the presence of trophic disturbances.

Mechanical Procedures

ABRAMSON: There are certain mechanical procedures which have received quite a little publicity and which in the past have had rather extensive clinical trial. Among these are the Sanders' oscillating bed, the Paevex boot and an apparatus which applies a positive pressure intermittently. I should like to obtain the Panel's reaction to their applicability.

BEACONSFIELD: I do not use them.

DYE: I do not use them either, but I must point out that at the Mayo Clinic the general feeling is that the Sanders' bed helps in some instances. Theoretically, there appears to be some mechanical advantage to draining the blood out of the veins. However, as I mentioned before, I have not had any experience with these machines.

ABRAMSON: If there is any advantage to the Sanders' oscillating bed, practically the same type of response can be obtained by using Buerger's exercises, with a great financial saving to the patient.

OLWIN: My feeling is that there is probably some psychic value in having the patient occupy himself by having his lower extremities placed in various positions during the course of the day. It gives him the impression that at least something is being done to help his condition.

ABRAMSON: One can then summarize the points of view presented by stating that the various mechanical procedures have little or no use in the treatment of peripheral vascular diseases. There is no clear-cut evidence that they are of value in increasing local circulation. Whether they have a beneficial psychic effect is a moot question.

Surgical Therapy — Grafts

ABRAMSON: I should like now to ask the members of the Panel to discuss a subject which is of great interest to them, the surgical procedures which are being used as therapy in arterial vascular disorders. Of these, the one which has made the greatest contribution in the past decade is the use of grafts for bridging segmental occlusions of arteries, an approach which has given us a glimmer of hope for the future control of some of the acute and chronic occlusive arterial vascular diseases. I should like to ask Dr. Dye to discuss this problem.

DYE: One of the questions which has arisen with regard to reconstructive surgery is what are the criteria for determining whether a patient is a suitable candidate for such a procedure. Should the patient who suffers only from intermittent claudication and who has no signs of impending or existing gangrene or ulceration be subjected to a rather serious operative procedure, as some of those utilized at present are, or should grafting be done only when trophic changes are already present?

The experience of our group in the past eight years has shown us rather conclusively that patients who have intermittent claudication alone and who, as a result, have difficulty earning a living because of limitation in walking, should have the benefit of some type of grafting procedure in order to increase the circulation to the lower extremities. This is particularly true in the case of the relatively young adult.

In the presence of gangrene there is a question of whether grafts are indicated. There is a small percentage of patients with gangrene of the digits, particularly diabetics, in whom a graft may have real benefit. At the same time that this procedure is done the necrotic tissue is removed. However, in general one can state that grafting is of limited value in the extreme cases.

ABRAMSON: I should like to ask Dr. Dye whether the site of occlusion affects the possibility of a successful outcome utilizing a graft.

DYE: In general, it can be stated that an obstruction at the bifurcation of the aorta lends itself most readily to a graft, since the morbidity is less and the results are better than in the case of by-pass procedures for a block in the femoral artery. We have never been persuaded that a satisfactory graft can be utilized in the case of obstruction of the tibial arteries alone, although such a possibility has intrigued us for some time.

ABRAMSON: Dr. Dye, would you now discuss the basis upon which you decide which type of graft to use?

DYE: The choice of the proper type of graft will depend upon a number of factors. At first, veins and arterial homografts were utilized, but at present, for the most part, the vascular surgeon depends upon some type of synthetic tube for grafting purposes. Among the latter are dacron and teflon. There are still times when a vein graft is preferable, particularly if a specimen of suitable size is available, but the greatest disadvantage to its use is that such a situation exists only occasionally. The synthetic grafts have the advantage of being readily available in various sizes. The disadvantages are that they constitute a foreign body, and little evidence exists at present concerning the long-range changes that may occur in them. Thus far the most complete follow-up series covers only three and one-half years of use of the synthetic grafts.

ABRAMSON: I should like to bring up the possibility of thrombosis following the grafting procedure. Dr. Dye, will you discuss this subject?

DYE: In our first cases, in which we used end-to-end anastomosis, the incidence of early thrombosis was about 50% and of the remaining patients, late thrombosis occurred in about 30%. As a result, out of the 30 cases in which this procedure was carried out, only nine grafts were patent at the end of two to four years. However, after we began to use by-pass grafts, approximately 75% of the cases demonstrated patent vessels at the end of a follow-up period of three and a half years.

ABRAMSON: Dr. Beaconsfield, do you agree with Dr. Dye's point of view?

BEACONSFIELD: When discussing arterial grafts for arteriosclerosis obliterans of the lower extremities, it is impossible to attempt to evaluate them as a group without considering the level of the arterial tree at which they are inserted. It is necessary, therefore, to divide the cases into two categories on the basis of the location of the graft above or below the point at which the deep femoral artery arises from the common femoral artery. Grafts proximal to this level give excellent results and are the treatment of choice whenever possible. However, in my opinion, those below this level, especially if they are long, are found to be much less satisfactory, particularly if the cases are followed for more than a year. In line with this point of view, I should like to quote some of the results reported in the literature.

Recently, I reviewed a paper by Natali, published in 1958 in the *Journal de Chirurgie*, in which he discusses at some length the pitfalls of arterial grafting. He points out that in the process of performing a graft operation, it is almost impossible not to sacrifice some of the important collateral vessels in the vicinity of the anastomosis. Shaw, in considering this problem at a meeting of vascular surgeons in New York in 1957, stated that even on a short-term followup, only 15% of his grafts were patent. Jahnke reviewed artery homografts performed on injured but previously normal arteries in soldiers wounded in the Korean War and found that 71% of these had thrombosed.

It seems to me, therefore, that while we should continue in our endeavors to improve our techniques and, thus, our results, for the present, at least, we should exercise due caution when considering reconstructive surgery for arteriosclerosis in which the involvement is in arteries of small caliber.

It is of interest that Cannon reported that femoropopliteal arterectomy produced a successful long-term response in 66% of his patients. Similar results have been noted by other surgeons. This procedure, while associated with many drawbacks, gives as good, if not better results than arterial grafts in those instances in which the segmental arterial thrombosis is located in midthigh or below.

ABRAMSON: Dr. Olwin, what is your reaction to the opinions already expressed?

OLWIN: I agree with the other two members of the Panel that transplants below the knee have a very poor possibility of success. With regard to the whole subject of grafts, my feeling is that the use of anticoagulants will increase the percentage of successful results.

ABRAMSON: As an internist, I agree with the vascular surgeons that there is a definite place in the treatment of vascular diseases for this type of procedure. Of particular importance is the fact that it may lead to an increased blood flow to all portions of the extremities, the deeper tissues as well as the skin.

Sympathectomy

ABRAMSON: We now come to a discussion of sympathectomy, another procedure about which there is much controversy and which, I think, has been recently downgraded, even by the surgeons.

BEACONSFIELD: I agree that this is a subject about which there is much difference of opinion. I feel, however, that certain aspects of the problem can be clarified. It is my belief that if an individual with arteriosclerosis obliterans has only the symptom of intermittent claudication and no trophic changes, sympathectomy will be of little help to him. There is no question that the operation will cause an increase in blood flow and that this will take place within 12

hours. However, in four to eight weeks the local circulation will be approximately the same as the preoperative level. Despite this the foot continues to remain warm, the explanation for which is not forthcoming.

ABRAMSON: There is good physiologic evidence to support Dr. Beaconsfield's point of view. The experimental data, for the most part, indicate that although the cutaneous blood flow is increased following sympathectomy, the circulation in the muscles is little if at all affected. I should like to ask Dr. Beaconsfield how he feels about doing a sympathectomy in the presence of a trophic change.

BEACONSFIELD: If a patient has an ulcer on his toe which does not respond particularly well to medical therapy, my belief is that before considering amputation a sympathectomy should be done in the hope of healing the ulcer, or, if not that, performing the amputation at a lower level. In other words, if there is danger of losing a limb, nothing is lost by attempting the sympathectomy and, as a dividend, the limb may be saved.

ABRAMSON: I am afraid that I cannot agree with that point of view, since I consider such an operation a rather heroic procedure associated with the various dangers of which we are all aware. Therefore, I do not feel that sympathectomy is indicated on the off-chance that it may be helpful. There should be a much better basis for performing it. I should like to ask Dr. Olwin if he holds the same point of view with regard to the use of sympathectomy in the treatment of intermittent claudication and of ulcers.

OLWIN: Essentially I do. Probably the benefit noted with regard to intermittent claudication is partially psychic. However, sympathectomy is of value in the healing of trophic ulcers.

ABRAMSON: Although there are still many questions to answer, we must conclude this panel. I wish to thank the Panelists for their contributions to the discussion.

Parathion Poisoning

A south Florida farmer who sprayed his collard greens with parathion dusting powder nerve gas died a gasping death on July 21. Dead was Clarence Akins, 55, of Florida City. Akins was admitted to a local hospital after he showed symptoms of having suffered a stroke, but an autopsy and investigation later showed death by parathion poisoning.

His wife told Dade County Medical Examiner Joseph Davis that her husband had purchased 50 pounds of the highly poisonous powder in a hardware store. Commonly known in the area as "two-dash-five" because of its composition of two per cent parathion and five per cent DDT, the deadly powder can kill when used by inexperienced persons.

Dr. Davis said his investigation showed Akins did not use a gas mask, but had only wrapped a strip of cloth around his nose and mouth while dusting two and a half acres. "He died of suffocation when the poison paralyzed his nervous system," said Dr. Davis.

Dr. Davis described parathion as a derivative of "G-gas" — deadly nerve gas developed by the Germans during World War II.

—*Miami* (Fla.) *Herald*, July 22, 1959.

The Use of PROCHLORPERAZINE in Seasickness

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• WOODRUFF SMITH, M.D.
• JOSEPH E. CORSO, M.D.
The Grace Line
New York, New York

Results of a study which indicates that this first compound of both phenothiazine and piperazine structures is effective in controlling nausea and vomiting associated with seasickness.

Samuel Butler once said, "Ah, how holy people look when they are seasick"; a feeble joke not likely to produce much laughter among the real victims of seasickness. To them seasickness is no joke, for it can all but ruin a long-anticipated vacation cruise. To the ship's surgeon it is no joke either, for he is responsible for the health and comfort of his patients. For that reason, we remain actively interested in the development of antiemetic agents.

Because most effective antimotion sickness drugs are either phenothiazine or piperazine derivatives, we thought that prochlorperazine, the first compound to contain both phenothiazine and piperazine structures, might possess significant antimotion sickness activity, and decided to evaluate this drug in seasickness among passengers on Grace Line vessels. Since the potential patients for this evaluation were actually vacationing passengers, an evaluation of prochlorperazine's prophylactic effectiveness was impractical. We decided, therefore, to evaluate its therapeutic effectiveness, which is considered by some investigators[1] to be a more rigid test of a drug's usefulness.

Each of the three vessels used in this evaluation is equipped with adequate hospital facilities and staffed with a ship's surgeon. Because each of the vessels accommodates a maximum of only 52 passengers (there are no "class" divisions), the ship's surgeon usually establishes friendly relations with the passengers quickly, and sees them at least once a day. His quarters are located in the passenger compartment, he dines with them, participates in shipboard social activities with them and frequently accompanies them on their trips ashore at various ports. Under these informal conditions, he is immediately available to any passenger who may require medical treatment, he can observe the progress of any patient he may be treating, and can sometimes provide early medical care for passengers who might be somewhat reluctant to consult him.

During a 10 month period beginning in January, 1958, 122 passengers (30 male, 92 female) who developed symptoms of motion sickness on regularly scheduled voyages between New York and the West Coast of South America were treated with prochlorperazine. Patients ranged in age from 10 to 85 years (average: 41 years). Forty-seven patients had vomited at least once before reporting to the ship's hospital; the remaining 75 were experiencing nausea and one or more of the other symptoms of motion sickness, such as dizziness, sweating, pallor, salivation or changes in blood pressure and heart rate. Following questioning and physical examination to exclude diagnoses other than seasickness, patients were given prochlorperazine orally in 10 or 15 mg sustained release capsules, or intramuscularly in doses of from five to 10 mg. The parenteral form was used in the more severe cases of vomiting and was discontinued as soon as the patient was able to retain oral medication. Ninety-seven patients received oral doses only, 21 received both intramuscular and oral doses, and four received intramuscular doses only. Initially, each patient was given one dose of prochlorperazine (either oral or intramuscular)

and was supplied with one or two capsules with instructions to take one capsule every 12 hours thereafter, as needed. Ten patients were given placebo capsules initially, identical in appearance to the active medication. Six of these patients eventually received prochlorperazine orally and are included in the series of 122 patients; four received placebo only. All patients were seen informally during the same day to determine the results of therapy.

Results

Results were considered "good" if nausea and vomiting were completely eliminated within two or three hours after the first dose of prochlorperazine, "fair" if two or more doses were required for complete control of nausea and vomiting, or if nausea and vomiting were only partially controlled; "poor" if nausea and vomiting were unaffected.

One hundred and two (83.6%) of the patients experienced good results; 19 (15.5%), fair and one (.9%), poor results. There were no significant differences in the results reported by each of the investigators (89.2%, 80.0% and 80.2% good results). In general, the first dose of prochlorperazine completely controlled all but the more severe symptoms of nausea and vomiting within one-half hour after intramuscular administration, and within one or two hours after oral administration. Patients with severe vomiting generally obtained results following the second intramuscular dose, given three or four hours after the first. As nausea and vomiting subsided, patients became active and were able to take foods and fluids orally. No patient found it necessary to remain in bed for any appreciable length of time, although a few did "just to play it safe." Appetites improved within 12 hours, and within a day or two virtually all patients were restored to a normal diet. Because of the rapid and lasting control of symptoms which prochlorperazine afforded, none of the patients experienced the weakness and dehydration that accompany prolonged vomiting.

Eighty of the patients, fearful of a return of symptoms, continued to take the drug orally for several days. During this time, complaints of significant nausea were rare and there were no reports of vomiting.

Of the ten patients who received a placebo, two recovered promptly, but eight continued to experience nausea and vomiting after three doses. In six of them the symptoms were severe enough to warrant the administration of prochlorperazine and all six experienced complete relief of symptoms following the first dose of the drug. The two patients who were continued on placebo obtained no significant benefit but recovered without the administration of active medication in two days. The number of patients receiving placebo is, of course, too small to have any statistical significance, but serves as a reminder that some patients benefit from any therapeutic effort.

Except for a more rapid onset of action when prochlorperazine was administered intramuscularly, there seemed to be no distinct difference between the routes of administration. Neither route produced cardiovascular effects such as hypotension or tachycardia. No photosensitivity reactions were seen. We did see mild drowsiness in 14 patients, and excessive salivation in one.

Comment

Some of the variables, such as weather conditions and location of passengers aboard ship, that must be considered in evaluating a drug's prophylactic value in seasickness (where the incidence rather than the control of symptoms is the measure of results) probably have less significance in a therapeutic trial. Nevertheless, these factors may have had some effect on our evaluation and must be considered when interpreting our results. However, it is interesting to note that the three participating investigators, working independently over a prolonged period of time, reported similar results both in patients who vomited and those who experienced only nausea.

Summary

The results of this study indicate that prochlorperazine is effective in controlling the nausea and vomiting associated with seasickness once they have occurred. A controlled study of the prophylactic effectiveness of prochlorperazine — a study in which weather conditions, passenger location, diet, and other variables could be correlated — seems warranted to determine the ultimate value of prochlorperazine in the prevention of seasickness.

Reference

1. Lederer, L. G. and Kidera, G. J.: Passenger Comfort in Commercial Air Travel with Reference to Motion Sickness, *Internal. Rec. of Med. and Gen. Pract. Clinics*, 167:661, 1954.

The Formative Days, 1938-1939 . . .

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION

In the June issue Dr. D. John Lauer, President of Industrial Medical Association, in his official page in the *Journal of Occupational Medicine*, in mild fashion discloses some of the disturbances that threaten the family that constitutes the Industrial Health Conference. Factually the American Industrial Hygiene Association, one of the Conference members, is the chief center in this dissonance. From the inception of the Conference, Industrial Medical Association has stoutly held that the Conference is its own property, subject to its ground rules, arrangements and organization. Under this umbrella various other kindred organizations long and constructively have engaged in activities constituting the totality of occupational health. American Industrial Hygiene Association, long discontented with what it believes to be too much parental authority, wants to own part of the umbrella.

Without engaging in any review of the merits and demerits as viewed by these two groups, it may be salutary to present the precise circumstances that eventuated in the organization of American Industrial Hygiene Association. This presentation is for the purpose of establishing the blood kinship between Industrial Medical Association and American Industrial Hygiene Association.

In ordinary life one is able to establish divorce proceedings against a spouse but there may be no divorcement from a son or a father. In truth a son may be disowned and a father may be scorned, but that has nothing to do with the genes and chromosomes involved. The genes and chromosomes of Industrial Medical Association were transmitted to American Industrial Hygiene Association as the documented material, appearing below, well establishes.

Manifestly the Industrial Health Conference should remain intact but with due consideration of what is fair for all concerned. As one step toward fending any schism this tracing of the family tree is here presented to indicate that in the event of any disunity the genes and chromosomes inescapably will remain intact.

The Association year of 1938-1939 for the American Association of Industrial Physicians and Surgeons, now the Industrial Medical Association, was a notable one. The ravages of the depression decade were wearing off. World War II, just ahead, was not then a matter of knowledge. In a measure, this was one of the golden periods for I.M.A. For the nation, this period was characterized by contentment — contentment, at least, in comparison with the state of affairs in 1959. During the Association year of 1938-1939, Dr. Clarence Selby was president. That year culminated in the spring meeting in Cleveland. Dr. Selby's tenure of office altogether was notable, but outstanding were two achievements which by later reckoning have become historical. These were the inauguration of the annual Knudsen Award and the planning for an association of nonmedical industrial hygienists which took form as the American Industrial Hygiene Association.

The history of the Knudson Award and its many medalists is the basis for various records. The present narrative is devoted to the planning activities that eventuated in the American Industrial Hygiene Association as supported by the officers and directors of A.A.I.P.&S. at the Cleveland session.

Prior to 1939, there had been conducted in Detroit and Chicago programs apart from but merging with the concurrent ones of A.A.I.P.&S. under the designation of Midwest Conferences on Occupational Diseases. While these first and second Midwest Conferences were directed in significant part to nonmedical industrial hygienists, they proved to be the turning point in

the upward swing and growth of the physicians' association. The presently continuing rise in the physicians' association's membership and activities was initiated in 1937 in Detroit and derived principally from the Midwest Conferences on Occupational Diseases. Dr. Clarence Sappington, in his subsequent review of these sessions wrote, "This has been one of the most important meetings ever held on this subject."

After the equally successful sessions in Chicago in June, 1938, Dr. Selby began his services as A.A.I.P.&S. President. One of his first acts was to crystallize the enormous nonmedical response into a permanent organization of the nonmedical but professional industrial hygienists. This followed the instructions of the A.A.I.P.&S. board of director's meeting of June 7, 1938, that a committee be appointed by the President to effect the permanent organization of the national conferences on occupational diseases. What happened in the ensuing 11 month period ending in the Cleveland sessions of A.A.I.P.&S. is fully documented, but not all of the documents may appear in this record.

The opening item is a letter dated July 15, 1938, addressed to Mr. William P. Yant, but with similar letter being sent each to Mr. Warren A. Cook and Dr. Gordon C. Harrold. The letter as here shown omits one line as not pertinent:

Dear Mr. Yant:

As President of the American Association of Industrial Physicians and Surgeons, I am taking the liberty of appointing committees to effect an organization of the Occupational Disease Conference, known as the Midwest Conference on Occupational Diseases, the latter to have autonomy and to work in cooperation with the former.

Inasmuch as Dr. McCord conceived the idea of the Conference, and as local chairman successfully promoted it last year, and inasmuch as he is a member of the Board of Directors of the American Association of Industrial Physicians and Surgeons, I have asked him to become chairman of the Conference Committee.

He has requested that I appoint you and Mr. Cook to work with him, and as his request meets with my full approval, I am writing you at this time, quite informally, to ask that you accept the appointment.

I believe that you, Mr. Cook and Dr. McCord have in this a very splendid opportunity. I know that you are capable of doing a very good job. Dr. McCord will write you. May I count on your acceptance?

With cordial regards, I am

Very truly yours,

C. D. Selby, M.D.

Dr. Selby's letter indicated this further communication from Dr. Carey P. McCord.

July 15, 1938

Mr. Warren A. Cook
Supt. Engineering Department
Zurich General Accident and Liability
Insurance Company Limited
Chicago, Illinois

Dear Mr. Cook:

For some time you and other outstanding industrial hygienists have recognized the need for an organization of the 500-1000 workers who are not physicians. Various suggestions have been made for associations on some basis with such groups as the American Chemical Society, the American Public Health Association or the American Association of Industrial Physicians and Surgeons. Nearly always, there has been a lack of enthusiasm and the belief that in all of these groups the industrial hygienists would be somewhat overshadowed. The converse opinion frequently has been encountered that if these engineers, chemists, laboratory technicians, nurses and others engaged in industrial hygiene work would have their interests best served, they must have an autonomous organization, controlled within itself, but affiliated with some other group of like interest.

The American Association of Industrial Physicians and Surgeons naturally recognizes the desirability of close and continuous connections with this group of industrial hygienists. This Association now contemplates such changes as may be necessary in its own organization as will pave the way for close affiliation with this group of industrial hygienists which they hope may be brought into being and which should function on an autonomous basis.

It is, of course, not within the province of the American Association of Industrial Physicians and Surgeons to organize or to attempt to organize this independent group of closely related workers. However, this Association deems it proper to make suggestions, to seek cooperation — all in the hope that arrangements satisfactory to both groups may be perfected.

To this end, an outline of possible plans has been prepared as a basis for further discussion. The writer, one of the directors of the American Association of Industrial Physicians and Surgeons, has been delegated to represent the American Association for the purpose of presenting the Association's attitude and to further this affiliation should this be the pleasure of the industrial hygienists' group.

Since there now exists no organization of industrial hygienists of the type contemplated in this letter, Dr. Clarence Selby, the President of the American Association of Industrial Physicians and Surgeons has selected three active

industrial hygienists and is asking them to serve as spokesmen for the unorganized group. These three men are Dr. Gordon C. Harrold, Mr. W. P. Yant and yourself.

The chief features proposed in the accompanying sheets are:

1) The organization of an independent association of industrial hygienists who are not physicians which will function with complete autonomy under some such name as the "American Industrial Hygiene Conference."

2) The putting on each year at the time of the annual meeting of the American Association of a highly creditable program devoted to industrial hygiene, occupational diseases and kindred matters, of a type represented by the Midwest Conference on Occupational Diseases held in Detroit and Chicago during the past two years.

3) Dual affiliation respectively with the American Association of Industrial Physicians and Surgeons as the chief affiliate and secondly with the American Chemical Society, if this may be arranged, and to the extent that the projected association may desire and may be able to arrange.

4) Utilization of all dues collected from members of the projected association in its own behalf, and the participation of the projected association in any profits that may accrue from exhibits jointly staged by the American Association and the projected association.

Greater detail is presented in the accompanying sheets.

Dr. Selby is especially desirous that this committee will take responsibility for plans for the next conference program of the type contemplated above. He anticipates that a thoroughgoing organization may not be provided prior to that time and in fact that at this conference the organization will be brought about, and independent of the American Association of Industrial Physicians and Surgeons. In other words, for the time being, it will be necessary to function on a somewhat nebulous basis — a few industrial hygienists stepping out and taking the leadership in this matter.

This letter, or its accompanying memorandum sheets, is not intended to commit the American Association in any fashion, as ratification of any plans that may be made will have to take place at the next annual meeting. In order that it may be quite clear that the American Association of Industrial Physicians and Surgeons does not seek to dominate this situation, let it be stated that the writer will be very glad to step out of this picture so soon as it may appear that the committee of three above named or some such committee will undertake responsibility for managing next year's conference with a program of its own devising, to be held at the time of the meetings of the American Association of Industrial Physicians and Surgeons, which Association possibly will convene in Cleveland, Ohio.

The writer, having been assigned this duty by Dr. Selby, places himself at your disposal for further discussion, exchange of letters, etc., all in the hope that happy arrangements may come about which will lead to the best type of cooperation between two groups functioning as separate entities, but no less pleasantly affiliated.

Very truly yours,
Carey P. McCord, M.D., Director
Bureau of Industrial Hygiene

By August 23, 1938, all three of the hygienists had accepted their appointment by Dr. Selby. This led to a letter from Dr. Carey P. McCord addressed to the entire committee, but by now a new designation appears — the American Industrial Hygiene Conference.

August 23, 1938

Mr. William P. Yant
Mr. Warren Cook
Dr. Gordon Harrold

Re: American Industrial
Hygiene Conference

Dear Sirs:

Warren Cook was here in Detroit last week and his presence provided an opportunity for discussing the proposed organization of industrial hygienists. He is agreeable and this makes the matter unanimous for the four persons appointed by Dr. Selby.

Lately the writer had opportunity to go over the material sent out by Mr. Yant concerned with closer connections with the American Chemical Society. There appears to be no conflict in this regard. Always there will be a number of chemical industrial hygienists who will prefer to present their reports of chemical investigative work before chemists. It is to be hoped that whatever symposia are arranged for the American Chemical Society Meetings will be planned for the fall meeting of the Chemical Society, in order that the spring season may be associated with the annual meeting program of the American Industrial Hygiene Conference. It is to be hoped that Mr. Yant, who is furthering this plan, will go ahead as contemplated in his recent letter. On the other hand, it should be recognized that the majority of industrial hygienists are not full-fledged chemists and that the need still exists for the organization of a general group, such as recently was presented in correspondence.

Mr. Cook has had a leaning toward the Industrial Hygiene Section of the American Public Health Association as the organization around which the nonmedical industrial hygienists might

rally. Undoubtedly, a fair number of industrial hygienists will continue to function in the American Public Health Association and others will join that body. No less, there still appears to be a need for an organization of nonmedical industrial hygienists, including engineers, chemists, administrators, technicians, nurses and others. It is to be hoped that such an organization may be perfected and that this organization, while maintaining its own integrity, will align itself with the American Association of Industrial Physicians and Surgeons, since there is a natural linkage and since the meeting of the two groups every year at the same place and time will provide for the interchange of information, the maintenance of exhibits, the sharing of costs for a full-time secretary, etc.

Dr. Harrold, while sponsoring the idea of the organization of an American Conference, believes that some connection with the American Chemical Society is desirable and that plans for this should be fostered.

All in all, the foregoing matters have been discussed either in person or by letter with all of the members of this Committee. From these discussions, it appears that the entire group favors the organization of an American Conference and along the general lines set forth in an earlier communication. Now the question arises, "What may be done at this early time?" Various suggestions are now made below and the advice and guidance of other members of this organizing group are now asked for.

1) It appears almost finally decided that Cleveland will be the next meeting place of the American Association of Industrial Physicians and Surgeons and prospectively the place for the organization of the American Industrial Hygiene Conference. It seems likely that this group of four of us must take the initiative in organizing an excellent program for two days in Cleveland which will be so attractive as to bring together a large group of those who should be interested. Already this writer has taken the liberty of inviting Dr. Victor Heiser, recently appointed as the industrial hygienist for the National Manufacturers' Association as a speaker. He will probably speak both before the American Conference and the American Association. By that time he will have become well acquainted with certain aspects of industrial hygiene and at least will be a drawing card for large numbers of persons. Also it appears possible that Dr. Vern Knudsen, of the University of California, may be induced to come East and present a paper on protection of the worker against noise. Dr. Knudsen is doing a lot of work in this field and has achieved some excellent results. At least six other speakers are desirable. One of our responsibilities is to locate these speakers and formulate a stimulating program. Your suggestions are invited.

2) During this two-day session, at least two hours and perhaps a half-day should be set aside for organization purposes — election of officers, adoption of a constitution, election of directors, etc. It is the writer's thought that it may be well carefully to plan out every step in the organization procedure in order to go before the assembled group with a definite plan. This thus becomes the second of our duties.

3) About October 3rd, Dr. Selby is calling a meeting of the Directors of the American Association in Chicago. At that time, the ground work for the alliance between the two groups should be laid. All of the members of the present committee are invited to attend this meeting in Chicago, but since it may not be possible for all to attend, a special effort will be made to have Mr. Cook present, because of his location in Chicago, thus paving the way for his unfailing attendance.

4) In order that the writer, who is the go-between for the two groups, may not appear to be taking too much of a hand in the organization of this nonmedical group, it appears that some one of the three industrial hygienists to whom this letter is addressed should be made Chairman of the Committee. Dr. Cook suggests that since Dr. Selby is located in Detroit, as is Dr. Harrold, that Dr. Harrold act as the Chairman pro tem. If this be agreeable to Mr. Yant, Dr. Harrold will be asked to serve in this capacity. It is probable, therefore, that hereafter Dr. Harrold will initiate various communications connected with this work.

5) It seems desirable that a letter should be sent to at least 50 industrial hygienists, advising them of this proposed organization. If there be no objections, Dr. Harrold will be asked to prepare such a letter and to affix names of the three members of the Committee, announcing that this plan is underway and indicating that formal organization will take place in Cleveland next May (the exact date and place will probably be determined about October 3rd at Dr. Selby's meeting of the Directors of the American Association).

6) Already there has been prepared a general outline of a suggested type of organization. This has been furnished three members of the Committee, but it now becomes a duty to consider these temporary suggestions and substitute other plans, if the type of organization there suggested is not acceptable.

7) At the time of the Milwaukee meeting of the American Chemical Society, there should be announced the fact that a new organization is being planned and the hope is that impetus may be given to the idea of the American Con-

ference at the time of this meeting.

8) At Dr. Selby's meeting in October, plans will be made for necessary changes in the constitution of the American Association of Industrial Physicians and Surgeons, such as will permit of an alliance with the American Industrial Hygiene Conference. It is the purpose of the American Association so to reorganize its own affairs that there will be no opportunity for any disharmony because of functioning in simbiosis with this new group.

These are the matters that appeal to the writer as requiring consideration of other members of this group. Request is now made for suggestions and advices on all of the matters above enumerated.

Very truly yours,
Carey P. McCord, M.D.
Director
Bureau of Industrial Hygiene

The state of affairs as of August 29, 1938, is reflected in the letter of Mr. William P. Yant to his cocommittee member, Dr. Gordon C. Harrold.

Dear Dr. Harrold:

Replying to your letter of August 26:

The letter that you have prepared as the "opening gun" in the organization of nonmedical persons interested in industrial hygiene is very good. I have only one suggestion to make and that is for you to sign your own name as Chairman pro-tem, following the suggestion made by Dr. McCord in his letter of August 23, of which I understand you received a copy. I heartily approve of this suggestion of Dr. McCord's not only because you and Dr. Selby are in the same community but also because you are one of the instigators of the idea to have an organization of the nature proposed and have followed it up capably and enthusiastically.

Are you going to the Milwaukee meeting of the American Chemical Society? I would be pleased to see you there and discuss this further.

Cordially yours,
William P. Yant
Director of Research and Development

The attitude of Warren A. Cook as of September 8, 1938, is revealed in his constructive letter of that date now quoted:

Dear Dr. McCord:
Re: Industrial Hygiene Conference

In regard to the leaning toward the Industrial Hygiene Section of the APHA which I have expressed in times past, may I state that more mature consideration of the situation from all angles brings me to the point that I feel a number of elements which are desirable are not afforded by the APHA organization. I feel that we will want to continue to give our support to this section but believe that a separate organization will permit a broader viewpoint than that of the purely Public Health aspect.

In regard to the American Chemical Society Section, this would not include a considerable group of engineers and others who would not be interested in the purely chemical phases of the situation. It seems to me that the development of an ACS Section by no means precludes the desirability of a separate Conference.

In regard to the specific items mentioned in your letter may I make the following comments:

(1) It would seem to me desirable to include among the speakers in Cleveland next spring, a number of men who have been active in industrial hygiene work, but who have not so far been featured on industrial hygiene programs.

(2) I trust that you and Dr. Harrold will take the initiative in drafting something for our consideration. This can presumably be deferred until after the meeting of the Directors of the American Society about October 3.

(3) I will make it a point to be in Chicago to attend this meeting and would appreciate any instructions or suggestions which may be forthcoming prior to it.

(4) Although it is helpful that geographic considerations make it convenient for Dr. Harrold to act as Chairman pro tem, may I emphasize my thought that my suggestion was made on the basis of other qualifications than the geographic that Dr. Harrold so act.

(5) Dr. Harrold has commenced his duties admirably in the drafting of the initial declaration of our purposes for distribution to a group of industrial hygienists.

(6) We will presumably go into this matter more in detail immediately before, during and after the October 3 meeting.

(7) The interest shown at the Milwaukee meeting of the ACS is, I believe, indicative of the general interest in the growing realization of industrial hygienists that they have a community of interests.

(8) Through your good offices and those of Dr. Selby it is my belief that an alliance can be developed with the American Society of Industrial Physicians and Surgeons in such a manner that any antipathetic simbiosis will be avoided.

Very truly yours,
Warren A. Cook, Superintendent
Engineering Department

However, during that same week, Dr. Harrold, acting as chairman pro tem of the committee, sent to some 50 or more industrial hygienists the following letter:

September 2, 1938

Dear Sir:

On various occasions, small groups of industrial hygienists who are not physicians have casually discussed the need for an organization of their own or close affiliation with some other group working in this field. Some have favored alliance with the Industrial Hygiene Section of the American Public Health Association, but that section is fairly well dominated by physicians; others have favored association with the American Chemical Society, but this would not interest the industrial hygienists who are not chemists; still others have contemplated an alliance with the American Association of Industrial Physicians and Surgeons, but this group does not admit to membership persons other than duly licensed physicians. Thus, the matter has been left dangling for many months.

Dr. Clarence Selby, Medical Director of General Motors Corporation and the present president of the American Association of Industrial Physicians and Surgeons, has worked out a plan which appears to be a favorable solution in this situation. Dr. Selby, with the approval of his board of directors, urges that the nonmedical industrial hygienists of the country form their own organization with its own officers, constitution, by-laws, directors, etc., and that it function autonomously but, because of the natural connection between industrial physicians and industrial hygienists in general, it is deemed that it will be advantageous all round if this new organization align itself with the American Association of Industrial Physicians and Surgeons to the extent of meeting at the same time and place, sharing in exhibits and exhibit profits if there be any, in joint efforts to secure the services of a full-time paid secretary who will serve both groups, and in joint efforts to build up a substantial magazine covering the field of industrial medicine and industrial hygiene.

For this purpose, Dr. Selby has appointed a committee of nonmedical industrial hygienists, and has asked Dr. Carey P. McCord of Detroit to act as representative of the American Association of Industrial Physicians and Surgeons in conferring with this committee, comprising Messrs. William P. Yant, Warren A. Cook, and Dr. Gordon C. Harrold. Already these gentlemen have accepted appointment on this committee and have committed themselves to the idea of a self-contained organization of industrial hygienists having some such name as "The American Industrial Hygiene Conference." Tentative plans have been drawn up with reference to the type of organization that appears to be desirable. This committee has accepted responsibility for the preparation of a two-day program just prior to the annual meeting of the American Association of Industrial Physicians and Surgeons, which in 1939 probably will be in Cleveland.

There is some thought that there should be a casual connection with the American Chemical Society, but less formal than that with the American Association of Industrial Physicians and Surgeons. It is not known that any conflict would arise over this procedure, and it is well understood that members or fellows of the proposed American Industrial Hygiene Conference likewise may be members or fellows of various other bodies in this same field.

It is planned that the formal organization of this society will take place at the time of the meeting, presumably in Cleveland and presumably next May. At last, it looks as though the industrial hygienists would have an outstanding organization of their own.

The purpose of this letter is to acquaint you with the general aspects of this plan, and to ask your support. This committee recognizes that it is not authorized to speak for you or for industrial hygienists in general, but since a start must be made and some preliminary plans must be drawn up, it is hoped that this organization committee may have your cooperation and assistance. This letter is being sent out to some 100 outstanding industrial hygienists. In turn it is asked that you write to or speak with all industrial hygienists about you and acquaint them with this contemplated step.

Particularly, we ask for suggestions from you as to outstanding speakers to participate in the scientific program of the meeting for next May. Dr. Victor Heiser, lately appointed as director of industrial hygiene for the National Manufacturers Association, will be present and will address the newly formed association as a foremost speaker. Dr. Heiser is best known as the author of "An American Doctor's Odyssey," and is a newcomer to the field of industrial hygiene. He and other speakers will assure a most helpful program at this first meeting of the American Industrial Hygiene Conference.

In addition to general and informative talks, we invite your cooperation in presenting new material or new aspects of old problems encountered in the field of industrial hygiene. It is hoped that this meeting may set a standard of new material which will permit the organization to function as the disseminator of valuable information to the experienced industrial hygienist as well as an informative agency for the large number of persons who spend only a portion of their time dealing with our problems or who may be dealing with limited portions of an industrial hygiene program.

Although not a great deal more is known at this very time in connection with organization

plans, this committee holds itself in readiness to furnish to you any available information.

Committee:
William P. Yant
Warren A. Cook
Gordon C. Harrold

Very truly yours,
Gordon C. Harrold
Chairman pro tem

By November 8, 1938, plans were well under way for a program on industrial hygiene at the Cleveland session of A.A.I.P.&S. This later took on the designation of the American Conference of Occupational Diseases and Industrial Hygiene. The early plans, both for this program and for the organizations, are set forth in a letter of November 8 from Dr. Harrold to Dr. Selby.

November 8, 1938

Dear Dr. Selby:

As related to you this morning over the telephone, we plan on attempting to get speakers on rather general topics for one day and on the presentation of new technical material on one other day. In addition, on the second day we hope to have a meeting to discuss the formation of a group of nonmedical industrial hygiene workers. In general, our outline for the first day will be as follows:

We hope that the promise made by Dr. McCord that Dr. Heiser will speak on this program will materialize. We plan on inviting Dr. Louis Dublin to speak, also some well qualified speaker on the various methods of commercial dust collection including all the newer applications such as electrical precipitation and micro multicyclones. We will also try to get a suitable speaker on the generalized subject of "fatigue." On this same day, if time permits, we will include some of the less technical and more general topics such as illumination and perhaps noise, with a view to interesting those who are more concerned with newer technical developments.

On the second day we plan on having a number of technical papers primarily of interest to chemists, engineers, and industrial hygienists. Inasmuch as I had hoped that this program would set a high standard, I brought this matter up to a number of interested industrial hygienists at the Milwaukee meeting of the American Chemical Society and have corresponded with several other people so that they would have time to put the finishing touches on new material by the time this Conference convenes. We have the possibility of papers on extensive research on chlorinated hydrocarbons; some new work from the Bureau of Mines, Pittsburgh; Dr. Luckeish of Cleveland has evinced the desire to talk on illumination; and, finally, the following people may have material ready to present:

Don Cummings
J. W. Fehnel
F. A. Patty
G. C. Harrold
H. Walworth
W. G. Fredrick
D. D. Irish

In order that this may truly be called a national conference, I plan on sending personal letters to a number of people who have produced excellent work in the past, expressing our hope that they will contribute valuable papers to this meeting. This list includes such persons as Drinker, Yaglou, Fairhall, Hatch, Meiter, and several others as their names come up in the recent literature.

In addition to these activities, I plan on sending another form letter clarifying some of the points raised in some 100 letters that I have received from interested persons. As I understand the matter and as I am proceeding, I intend to point out that this Conference is to provide an opportunity for an expression of thought from nonmedical industrial hygienists, engineers, and others concerning the formation of an independent industrial hygiene group with the opportunity offered by the Association to conduct business and promotional activities, including joint meetings of mutual advantage to both groups.

I would appreciate receiving a call on this note in the event that any misunderstandings are evident.

Very truly yours,
G. C. Harrold, Ph.D.
Industrial Hygiene Laboratories

The several group letters, and notably the one with broader distribution written as mentioned by Dr. Harrold, led to eager response in all. Individuals and some groups favored independent organization or at least an independent organization to be identified with A.A.I.P.&S. The chief opposition appeared to favor identification either with A.P.H.A. through the engineering or industrial hygiene section, or instead the American Chemical Society as a section. During the period near to November and December of 1938, widespread was debate and not entirely was unanimity of desires reached. The next step in the orderly progress of this enterprise was the discussions at the board of director's meeting (A.A.I.P.&S.) in Cleveland, Ohio, November 12, 1938. This directors meeting was in preparation for the annual meeting to take place in Cleveland in June, 1938. What transpired is recorded in the minutes of A.A.I.-P.&S.

The report of the Committee on Permanent Organization of the Midwest Conference on Oc-

cupational Diseases was presented by the members of the committee who were present: Dr. Carey McCord, Mr. Yant and Mr. Cook. Dr. Harrold, the other member of the committee, was absent. The report was as follows:

"Dr. McCord reported that he acted as an intermediary from this group of yet unorganized individuals mostly consisting of industrial hygiene workers. He went into the history of the development of this activity and stated that there has been a very rapid growth during the past three or four years from a total of some 100 individuals to a group of well over 1,000 men and women who are keenly interested in some aspect of industrial hygiene such as closely associated to the physician's work. This group consists of chemists, physicists, technicians. Most of these individuals are professional, and many of a semiprofessional status. He stated that many of these persons were members of the American Chemical Society and practically all of them were members of the American Public Health Association. The group also included quite a few engineers interested in various phases of industrial hygiene.

"Dr. McCord then went into the history of the contact between this group of individuals at our Association which had its most prominent activity in June, 1938, Meeting and at which time there was some discussion of organization as well as the prospect of helping to arrange some workable understanding or affiliation with the American Association of Industrial Physicians and Surgeons. Dr. McCord further stated that there was a Michigan Society of Industrial Hygienists at the present time and that there was also a governmental Industrial Hygiene Association which included the heads of the various state departments of Industrial Hygiene. This group has had several meetings, I think the last one being in Washington. It was further stated that there was a genuine desire among the persons in this industrial hygiene group to align themselves with some other organization. Other groups with which they have given some consideration of affiliation is the American Chemical Society and second, the American Public Health Association particularly through its industrial hygiene section. There has also been considerable activity indicating a desire for an entirely independent organization which on the other hand it is hoped to line up with some other group which will strengthen and lend support to this new organized group of industrial hygienists. It is hoped that this connection or affiliation will be definite enough so that certain things can be accomplished. Among these are, first, the industrial hygienists to be able to meet in the same place with the other group. Second, that there will be an opportunity for scientific exhibits to be held in common with the other group. Third, such organization of industrial hygienists would hope to be able to share the expense of an executive secretary to carry on the work of both groups. Fourth, it is hoped to work out some sort of an association membership between the association and this hygiene group.

"Dr. McCord recommends, first, that our Association show a receptive attitude toward this overture and second, that our Association become instrumental and active in the organization of such a group.

"Mr. Warren Cook, speaking as a member of this Committee, asked the question of whether there is actually a field for a new association of industrial hygienists and calls attention to the existence of a Public Health Section of the American Public Health Association. He also supplements this statement by saying that the Public Health Section does not give ample opportunity for the expression of this group of industrial hygienists and does not give them the opportunities that they seek. Mr. Cook further stated that the advantages of a newly contemplated association would be, first, we would be able to arrange a program which would be of keen interest to this group of specialists and would be able to carry out a portion of the American Conference of Occupational Disease as contemplated in the June meeting. Second, Mr. Cook stated that the industrial hygienists at the present time get support from their employers in attending meetings of our Association or such as the Midwest Conference of Occupational Diseases that were held in Detroit and Chicago in 1937 and 1938, but he states that industrial hygienists do not get adequate support from their employers when they seek to go to the Industrial Hygiene Section of the American Public Health Association.

"Mr. Yant, as a member of this Committee, also reported that there was a rapid growth in this group of specialists in industrial hygiene and he sought to point out the parallel growth of the industrial hygiene group and its development and growth and our Association and our industrial activities. He states that the American Chemical Society gives some opportunity for expression in the field of industrial hygiene but that it does not give them all the opportunity they seek and that it only covers a certain phase of the problem of industrial hygiene. He further stated that the contemplated association between a newly organized group of industrial hygienists in our Association would not give rise to any new meetings as we contemplate carrying on these meetings regardless of the affiliation and second, that there will be no new memberships to be formed and that it was not just another new association.

"At this point, Dr. McCord recommended that our Association extend an invitation to this new group. Dr. Lynch then moved and Dr. McConnehey seconded the acceptance of this report of the American Conference of Occupational Diseases, that it be received and approved. It was further moved by these gentlemen that the committee be authorized with power to act and instructed to welcome and encourage cooperation of our Association with the formation of a new group of industrial hygienists and that this committee be empowered to meet and effect a close affiliation between the group of industrial hygienists and the American Association of Industrial Physicians and Surgeons. This motion was unanimously passed.

"It was suggested and the Board accepted the suggestion that the first two days being June 5 and 6, and the contemplated new group of industrial hygienists be allowed to formulate their own program for these first two days and that their committee meet with a joint committee of Dr. McCord, Dr. Harrold, Mr. Cook and Mr. Yant and this group was to cooperate with our Program Committee in arranging for the June Meeting.

"There was considerable discussion as to what the new name of this meeting should be now that it has attained a national scope, and this matter was left to committee of Mr. Yant, Dr. McCord and Mr. Cook and after considerable discussion, these men suggested that the June Meeting be known as the American Conference on Occupational Diseases and Industrial Hygiene and the Twenty-Fourth Annual Meeting of the American Association of Industrial Physicians and Surgeons."

The final item of record of organization of the industrial hygienists appears in the minutes of the board of directors, June 6, 1939, in Cleveland:

"Dr. Carey McCord reported that an organization of the industrial hygienists had been completed and it was moved and seconded that a communication be addressed to them felicitating them upon their organization and inviting them to affiliate with us. This motion was carried."

It was reported that of this organization of industrial hygienists Mr. William P. Yant had been made president and Dr. Gordon C. Harrold secretary.

Since 1942, the American Industrial Hygiene Association has issued a publication, the *American Industrial Hygiene Association Quarterly*. For several years, the *Quarterly* was edited, published and distributed by Industrial Medicine Publishing Company. In 1958, the American Industrial Hygiene Association elected to publish the *Quarterly* in their own offices with their own personnel. Industrial Medicine Publishing Company at that time donated to American Industrial Hygiene Association the entire publication and transferred all assets to the Association without charge.

The *American Industrial Hygiene Association Quarterly* continues publication as the outstanding journal in the field of industrial hygiene.

The brilliant record of this organization of industrial hygienists, perfected in 1939, is well known to subsequent history.

Long-Range Smog Study

Residents of Donora, a Pennsylvania mining town of 12,000 which hit the nation's headlines in 1948 because of a smog which resulted in the death of 20 people, have since shown a substantially higher prevalence of cardiovascular and respiratory diseases, increased hospitalization and more chronic asthma and bronchitis than their nonaffected fellow citizens, according to a recent report.

It was the first study of its kind on the long-term effects of a potent smog, undertaken by the University of Pittsburgh School of Public Health.

"The relationship of particular contaminants in the Donora air to specific symptoms could not be pinned down," the report said, but "the smog, in essence, also brought out or accentuated previous disease.

"For the period since the smog, the death rate among men in the affected group is more than twice that of nonaffected males," the report continued. "The difference in the mortality of the two groups showed up within one year after the 1948 smog and increased steadily until 1954, when it apparently stabilized."

Concluding that affected citizens showed a higher rate of current symptoms and a higher prevalence of chronic illness, the differences were apparent in most ages and sex classifications, "even the group under 20," according to the report.

—From *Ohio State Medical Journal*, July, 1959.

Low Back Pain

• GEORGE S. HACKETT, M.D., F.A.C.S.
Canton, Ohio

A discussion of the use of prolotherapy for treatment of ligament and tendon relaxation.

Chronic low back pain is caused more often by incompetent ligaments and tendons to maintain normal tensile strength than for any other reason. It is the cause of joint instability and is frequently confused with disc disability and arthritis.

Pain has its origin when weakened ligament and tendon fibers stretch under normal tension and permit an abnormal tension-stimulation of the somatic sensory nerves that will not stretch.

The diagnosis is made by trigger point tenderness over specific articular ligaments. The diagnosis is invariably confirmed by intraligamentous tendonous needling with a local anesthetic solution which reproduces the local pain and sometimes specific referred pain with intensity, only to disappear within two minutes as anesthesia takes place.

Ligaments

The interspinus ligament is the most important ligament of the spine because it maintains stability while limiting the range of motion of one vertebra upon another, and it must be weakened to permit abnormal strain of the spinus articular ligaments, abnormal compression of an intervertebral disc, and accounts for much of the so-called "slipped, crushed, or ruptured disc" and muscle spasm.

Figure 1 shows a vertical section through lumbar vertebrae. The vertical line passes through the two articular fulcrums. A one and one-half inch needle is shown in position for confirmation of the diagnosis and for treatment. The point of the needle has passed through the supraspinus ligament and is in the *diagonal* fibers of the interspinus ligament.

When one vertebra normally glides forward on the articular processes of the adjoining vertebra below, both the interspinus and supraspinus ligaments assume a more diagonal position without stretching, as the spines of the two vertebrae come slightly closer together.

Presented at Industrial Medical Association Annual Meeting, Atlantic City, April, 1958.

To permit any abnormal forward movement of one vertebra on another such as occurs in spondylolisthesis and compressing an intervertebral disc, the fibers of the interspinus ligament must be torn or stretched, as in chronic relaxation, while the supraspinus ligament may assume a more diagonal position in the moderate cases but must also be disabled together with the spinus articular ligaments and others in the severe cases.

The interspinus ligaments are probably the most important ligaments throughout the spine in limiting joint motion while maintaining joint stability.

The interspinus relaxation is frequently accompanied by relaxation of the articular ligaments on one or both sides of the same vertebra.

The iliolumbar ligament is also relaxed in the lumbosacral joint instability (Figure 2).

The sacroiliac, sacrospinus and sacrotuberus ligaments (Figure 2) are relaxed in instability of the sacroiliac joint.

Tendons

A frequent source of lumbar and buttocks pain is weakness of the tendonous attachments of the sacrospinalis muscle to the spine and transverse processes of the lumbar vertebrae and dorsum of the sacrum (Figure 3), and weakness of the tendonous attachments of the gluteal muscles to the dorsum of the ilium (Figure 4) which have previously been erroneously designated as fibrolipomatous nodules, fibrositis, herniated fat pads and syndromes.

Referred Pain — Sciatica

There is more referred pain into the lower extremities to as far as the toes and more sciatica (Figure 5) from incompetency of the lumbosacral and sacroiliac articular ligaments than from all other sources combined.

From observations while making approximately 18,000 intraligamentous injections during 19 years while diagnosing and treating 1,706 patients, there has been constructed def-

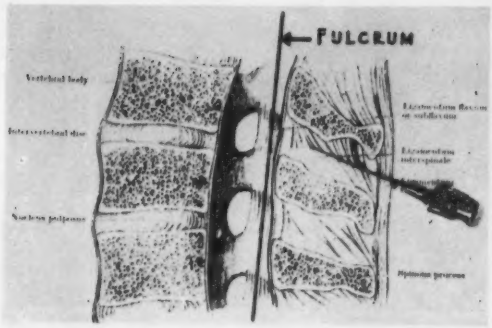
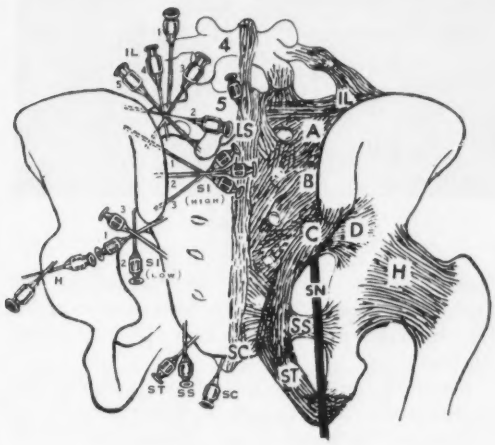


Figure 1

TRIGGER POINTS OF PAIN AND NEEDLES IN POSITION FOR CONFIRMATION OF THE DIAGNOSIS AND FOR TREATMENT OF LIGAMENT RELAXATION OF THE LUMBOSACRAL AND PELVIC JOINTS.



TRIGGER POINTS OF LIGAMENTS

IL	-	Iliolumbar
LS	-	Lumbosacral - Supra & Interspinus
A,B,C,D,	-	Posterior Sacroiliac
SS	-	Sacrospinus
ST	-	Sacrotuberus
SC	-	Sacrococcygeal
H	-	Hip - Articular
SN	-	Sciatic nerve

Figure 2

inite referred pain areas from specific ligaments which are valuable in diagnosis by directing attention to the particular disabled ligaments.

Sciatica results when the lower portion of the posterior sacroiliac, sacrospinus and sacrotuberus ligaments (Figure 2) become excessively incompetent to maintain stability of the sacroiliac joint. It is accompanied by sciatic nerve tenderness and conducted pain to as far as the toes (Figure 5) which is distinguishable from the definite areas of referred pain from the articular ligaments.

Treatment

The treatment of ligament and tendon relaxa-

TRIGGER POINTS AND REFERRED PAIN - SACROSPINUS AND ILIOCOSTALIS TENDONS.

LUMBAR VERTEBRAE (TRANSVERSE PROCESSES) AND RIBS.

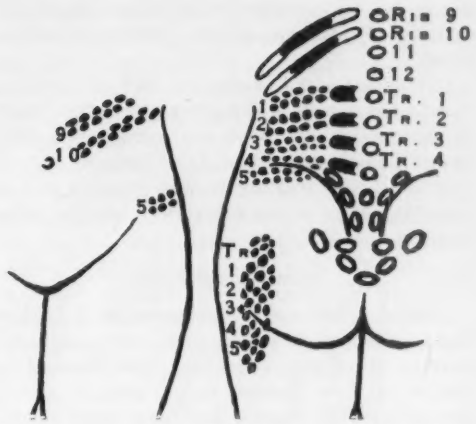


Figure 3

Iliocostalis and sacrospinus tendons. Trigger points of pain (Rib 9,10) and areas of referred pain (9,10) from relaxation of the iliocostalis tendonous attachments to the ribs are included with the trigger points of pain (Tr.-1,2,3,4,5) and areas of referred pain (1,2,3,4,5) from relaxation of the iliocostalis tendonous attachments to the transverse processes of the lumbar vertebrae.

TENDON RELAXATION

Trigger Points

1 Occipital
2 Cervical vertebra.
3 Dorsal vertebra.
4 Lumbar vertebra.
5 Sacrum. Sacrospinalis.
6 Sacrum. Gluteus maximus
7 Ribs. Postural strain.
8 Ribs. Iliocostalis, etc.
9 Scapula. Supraspinatus
10 Scapula. Infraspinatus.
11 Scapula. Deltoid origin.
12 Humerus. Deltoid ins.
13 Humerus. Lat. epicondyle.
14 Ilium. Gluteus maximus.
15 Ilium. Gluteus medius.
16 Ilium. Gluteus minimus.
17 Femur. Gt. trochanter.
18 Pubes. Descending ramus.

Figure 4

Trigger points of relaxed tendonous attachments of muscles to the occiput, vertebrae, sacrum, ribs, scapula, humerus, ilium, pubes and femur are included in one dermatome.

tion (incompetency) is by prolotherapy (the rehabilitation of an incompetent structure by the induced proliferation of new cells). It is accomplished by the intraligamentous injection of a proliferating solution (Sylnasol, G. D. Searle & Co.) combined with a local anesthetic solution (Pontocaine, 0.15%, Winthrop Laboratories).

It stimulates the production of new bone and fibrous tissue cells which strengthens the "weld" of fibrous tissue to bone and permanently eliminates the pain and disability (Figure 6).

Most of the treatments were carried out in the office. More severe cases were treated in the hospital.

Animal Experiments

Animal experiments were reported in 1955 on the injection of a stimulating solution into the tendons of rabbits (Figure 6). It revealed the stages of new fibrous tissue cellular growth throughout the tendon and new bone cellular growth at the fibro-osseous junction. The new tissue became permanent to strengthen the "weld" of fibrous tissue to bone and explains the excellent results that have been obtained clinically.

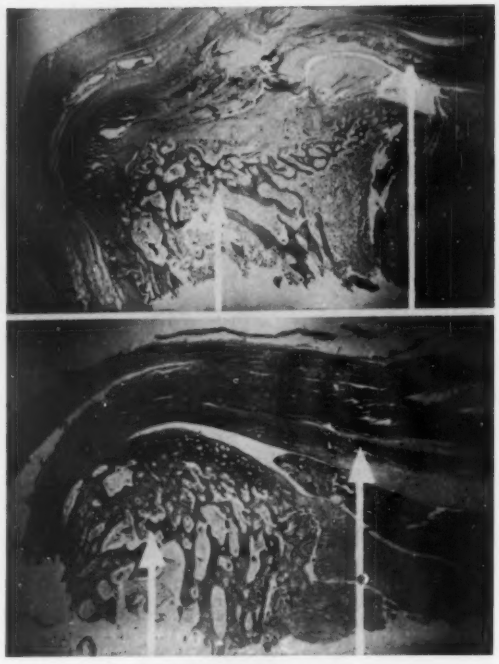


Figure 6

Figure 5 shows two microphotographs of the gastrocnemius and superficial flexor tendons attached to the tibial tarsal bones of a rabbit. Following decalcification, the sections were made from the central part of the end of the bone together with its tendon attachment, the fibro-osseous junction.

Below is a decalcified section from the control leg. The end of the bone is shown on the left (short arrow).

On the right is shown the fibrous tissue (long arrow) as it swings over and around the bone to its anterior surface on the left where the attachment is made to the bone. The fibers of the tendon are continuous through the periosteum with the fibrous matrix of the bone.

Above is a decalcified tissue section from the leg which received one injection of the proliferant solution. The same technique was followed as is used clinically.

The injection was made from above and was distributed down through the fibrous tissue and along the posterior edge of the bone, through the area shown by the long arrow.

The proliferant stimulated the production of new bone and fibrous tissue cells at the fibro-osseous junction which became permanent.

At two months it reveals an abundant increase

REFERRED PAIN AND SCIATICA - ILIOLUMBAR, POSTERIOR SACROILIAC, SACROSPINUS AND SACROTUBERUS LIGAMENTS.
(ILIOLUMBAR AND SACROILIAC JOINT INSTABILITY.)

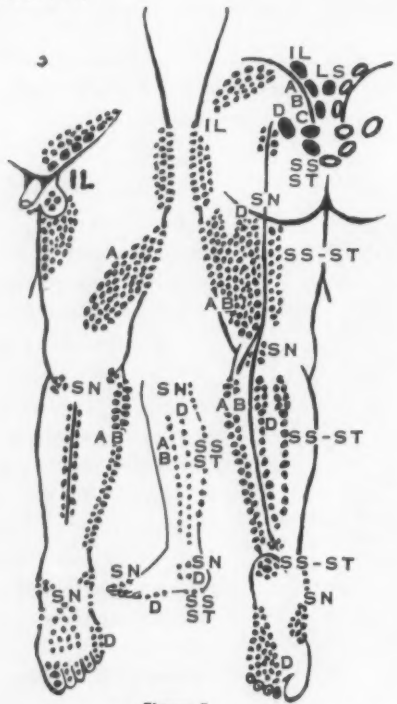


Figure 5
Referred pain areas from the iliolumbar (IL), posterior sacroiliac (A,B,C,D), sacrospinus (SS) and sacrotuberus (ST), and the conducted pain of sciatica (SN) are combined in one dermatome.

of the fibrous connection between the tendon and the fibrous bone matrix. This gives a stronger "weld" at the fibro-osseous junction and accounts for the clinical results obtained.

Statistics and Comment

Ligament and tendon incompetency is referred to as ligament and tendon relaxation. It occurs following strains and tearing of the fibers when they do not regain their normal tensile strength.

Ages range from 15 to 88 years.

Duration of disability was three months to 65 years.

Statistics reveal that in the treatment of 1,706 patients over a period of 19 years, 82% consider themselves permanently cured.

Following treatment, the patients usually are able to pursue their ordinary activities.

There has not been any unfavorable sequelae.

The treatment includes the tendons and articular ligaments from the occiput to the feet.

The growth of new tissue takes place over a period of approximately six weeks.

The patients returned for re-evaluation two months after receiving the treatment.

Summary

Ligament and tendon relaxation (incompetency) is the cause of more low back disability than any other entity and is the cause of more referred pain to as far as the toes and more sciatica than from all other conditions combined.

Dermatomes of referred pain areas from specific disabled ligaments and tendons have been constructed from observations while giving approximately 18,000 injections (intraligamentous) in the diagnosis and treatment of 1,706 patients over a period of 19 years. The dermatomes are valuable in diagnosis by directing attention to the ligament as the origin of pain.

Treatment by prolotherapy has been successful in 82% of the patients treated.

Prayer at the Wheel

Motoji Hatano decided that something drastic had to be done. As president of Tokyo's Kokusai Bus Company, he could hardly ignore the fact that its 59 buses had had 22 accidents this spring — three times as many as last spring. It was the same with the other Japanese sightseeing-bus companies; a total of 51 crashes, 5 deaths, 843 injured. President Hatano's manager did some oriental-style brainstorming and came up with an idea any adman would be glad to put on the train for Westport. The idea: send the bus drivers to a Zen Buddhist temple to cool off with a little meditation.

Last week 33 of the company's drivers and five of its female guides returned to work after completing the first course at Kamakura's 13th century Zen temple, Engakuji. For five days they rose at 4:30 A.M., cleaned their own rooms and swept the temple grounds, and meditated. Anyone who found his mind wandering was supposed to unclasp his hands as a signal, whereupon a waiting monk gave him three sharp thwacks with a stick. Twice a day Chief Abbot Sozen Asahima, 59, lectured them. "When you are in your bus, seated at the wheel or talking to passengers, and feel fatigue overcoming you, stop what you are doing, and for 10 minutes sit upright with your hands clasped. Empty your mind of everything. Just meditate. After 10 minutes, drive on."

At the end of the course, Abbot Asahima turned his quickie Zen bus drivers loose with the words: "Continue to meditate, or your light may go out."

In Britain, where more than 6,000 were killed, 300,000 injured in traffic accidents last year, a Church of England clergyman had a similar message for motorists. Vicar Vyvyan Watts-Jones of Darlaston's All Saints Church suggested a ten-second prayer to be pasted on dashboards and to be read before each trip: "Help me, O God, as I drive, to love my neighbor as myself, that I may do nothing to hurt or endanger any of your children. Give my eyes clear vision and skill to my hands and feet. Make me tranquil in mind and relaxed in body. Deliver me from the spirit of rivalry and from all resentment at the actions of others and bring me to my journey's end." ——— Courtesy TIME; copyright Time, Inc., 1959.

A Hand Cleanser Derived from Soybean

• CONRAD STRITZLER, M.D.
Department of Dermatology
Downstate Medical Center
Brooklyn, New York

The cleanser was used as an adjunct to therapy by patients with dermatitis who continued at work.

The cleansing of oil and water soluble materials from the hands of industrial workers without traumatizing the skin has proved a difficult problem. The following considerations must be met in compounding such a cleanser:

1. There should be minimal degreasing action on the skin. Degreasing agents remove surface lipids derived from keratin and may interfere with the water barrier which lies close to the cutaneous surface.[1]

2. There should be minimal alteration in skin pH by the cleanser.[2] There is evidence that many skins have low tolerance for alkalies.[3] It is probable that a marked shift in surface pH toward the alkaline side is prospective of damage to cutaneous enzymes and buffer systems, and probably indicates gross interference with cutaneous physiology.[4,5]

3. There should be adequate cleansing with minimal physical trauma. The use of mineral abrasive agents with attendant trauma is to be deplored.

4. The cleanser should be cosmetically acceptable; that is, there should be no unpleasant odor or unpleasant feel associated with it.

5. Finally, it should be readily available, and should not interfere with the workers product; that is, it should not itself soil or grease or otherwise unduly affect the product of the workers' labor.

A cleanser approaching these requirements has been met by the incorporation of colloids and lipids derived from soy bean with an acid mantle® cream. It has been employed in the cleansing of hands of patients with the following industrial dermatoses during the past two years:

Cinnamon dermatitis in bakers	4
Chromate dermatitis	16
Cement dermatitis	21
Solvent dermatitis (due to turpentine, gasoline, naphtha, benzene)	44
Overtreatment dermatitis	49
	134

A total of 134 such patients have used this cleanser while being treated and investigated to determine the cause of their cutaneous problem. All had fairly severe eruptions. Seventy-four percent, 98, of these patients were able to use the cleanser effectively while there was active dermatitis present, and these continued to work while being treated. Twenty-two percent showed no reaction to the cleanser in the presence of active dermatitis, but the patients felt that the cleansing action was inadequate. These were chiefly patients who had rather severe solvent dermatitis due to the use of turpentine and other solvents to remove paint and various greases from their hands. However, in these, soil was adequately cleansed away and the cleanser did not aggravate the dermatitis.

In 7% of the patients the cleanser was not tolerated and it had to be discontinued. All of these were patients with chromate dermatitis.

It must be remembered that all of these patients had moderate to severe dermatitis of the hands, and used the cleanser three to six or more times daily during the course of their work. Once the dermatitis subsided, the cleanser was used instead of the usual soap, and the incidence of recurrence was so low that it

®The product, Soy-Dome was supplied by Dome Chemicals Company, New York City.

seemed probable that the cleanser played a protective role in this regard. It appeared to deposit a thin lipid layer on the cutaneous surface after cleansing which helped to protect against cutaneous irritants.

As a quasi control to the foregoing, a minor study was conducted in which one-half of the 180 workers were furnished this soy bean cleanser and the other 90 the usual industrial skin cleanser containing a mineral abrasive. This study was in a plant providing exposure to chromates, cutting oils and various solvents. Over a period of three months, two of the 90 workers using the soy bean cleanser developed dermatitis of the hands, both caused by turpentine. Seven of the 90 workers using the abrasive cleanser developed dermatitis of the hands, three from chromates, two from cutting oil and two from turpentine. It is realized that for statistical purposes this partly controlled study warrants no conclusion other than that the product itself produced no recognizable dermatitis and generally was well tolerated.

The cleanser consists of a soy bean fraction incorporated in an acid mantle cream, plus an anionic detergent derived from lauric acid, catalytically hydrogenated, esterified with sulphuric acid, and treated with ammoniacal alkali under controlled pH. The soy bean fraction is obtained from dehulled and defatted soy bean and consists chiefly of protein and carbohydrate, with 0.6% fats. The essential action appears to be that of a buffer and dispersing agent which deflocculates the surface debris and reduces particulate size, thus diminishing its ability to adhere to the cutaneous surface, and permitting it to be floated away as a colloidal suspension.

Summary

A cleansing agent in the form of a cream made up of colloidal lipid materials derived from soy bean in an acid mantle base was used as a cleansing agent in 134 patients with contact dermatitis of the hands. In 75% of these, it proved an adequate cleansing agent while the patient was undergoing investigation and treatment to determine the cause of the dermatitis, with little or no interference with the healing of the eruption; in 21% there was little interference with the dermatitis, but the patients did not consider the cream to be an adequate cleanser for the paints, inks and greases with which they were in contact; while in 4%, the patients could not tolerate the cleanser (seven of 134 patients).

Two groups of 90 workers in an industrial plant were studied: one used the soy bean cleanser, the other an abrasive cleanser; there were 2.2% (two) cases of dermatitis of the hands due to turpentine in the first group; while in the second, there were 7.8 (seven) cases of hand dermatitis, two due to turpentine, two due to cutting oils and three due to chromates.

The belief is that the use of this skin cleanser during episodes of dermatitis in which the workers continued at work contributed to the fact that they were able to remain at their work posts.

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Poor People Are Sicker

As a result of illness and injury, workers with family incomes under $2,000 per year lost an average of 10.3 days from work during the 12 months ending June 30, 1958, as compared with a loss of 5.9 days for those in families earning $7,000 and over, according to findings of the U. S. National Health Survey of the Public Health Service.

An inverse relationship existed also between income and other forms of restricted activity, such as days in bed due to illness and injury.

Workers 65 years of age and over lost about 11 days from work compared with 8.4 days for those in the 45-64 year group and 6.3 days for those aged 17-44.

City children lost 9 days from school, on the average, as a result of illness and injury; rural nonfarm children lost 7.8 days; and farm children lost 7.3 days. However, farm children of 15 and 16 lost about 10 days from school as compared to 6.5 days lost by urban children of these ages.

Medical Problems of Shift-Work

• ANTHON AANONSEN, M.D.
Oslo, Norway

Summarizing the results of a six year study of the medical problems connected with regular shift-work at three factories in Norway.

These investigations were made at two electro-metallurgical factories, "Det Norske Zink-kompani A/S" and "Det Norske Nitridaksjeselskap," and the electrochemical factory "Odda Smelteverk A/S," all of them situated at the small industrial community Odda in the western part of Norway.

Together, these three factories employ about 1,750 persons, of whom a considerable number have regular shift-work.

The author, from 1948 to 1954, was attached to these companies as physician in charge of their medical problems, and during these years made a thorough study of the medical problems connected with regular shift-work. The present article is a summary of this study.

The conditions at the factories were favorable for making such a study, as the number of employees was relatively constant, most of the men having worked there for years.

All the laborers had a routine medical examination once a year by the author and all of them were compulsory members of the local health insurance company. This enabled me to get additional information about possible consultations with other physicians.

All employers and foremen are excluded from this investigation. So, also, are the laborers who began working at the factories after 1948 and those less than 20 years old.

The number of laborers included in the investigation is then reduced to approximately 1,100. Twelve of the laborers who should have been included rejected the routine examinations and had to be excluded from the investigations. As this number does not represent more than 1% of the total number it is not likely to influence the result.

Classification of Laborers

The 1,106 persons in question — all men — subjected to the investigations of the present study, have been classified as follows:

	Number of men
Day-laborers	345
Shift-laborers	380
Day-laborers (previous shift-laborers)	350
Alternating day- and shift-laborers	31
Total	1,106

The 345 day-laborers have never had shift-work. Of the 380 shift-laborers some have only had shift-work while the major part previously has had mainly shift-work and day-work only for a shorter period.

The 350 day-laborers had previously — for a shorter or longer time — been shift-laborers before they became day-laborers.

These 350 men I divided into two groups, A and B.

Group A consists of 128 laborers, having been dispensed from shift-work owing to ailments incurred during this kind of work. Even if a such change-over of work has not always been made according to a doctor's certificate, it is obvious that these laborers had been transferred from shift-work to ordinary day-work for medical reasons.

Group B comprises 222 laborers, who more incidently have passed from shift- to day-work. However, for this group it is also most probable that shift-work had caused trouble to some of them, and this fact has been an accompanying reason for their change-over to day-work.

A lesser group of 31 laborers, have alternately had shift- and day-work during the time of investigation.

With the object of forming an opinion, by making a comparison of the respective state of health by different kinds of work for the groups of laborers concerned, I have for the subject matter applied two designations, "free from symptoms" and "with symptoms."

The latter designation includes all the laborers

who for some reason are suffering from diseases, determined by the following groups: (1) neuroses and nervous disorders, (2) diseases in digestive organs and (3) angina pectoris and infarctus cordis.

Group 1: Neuroses and nervous disorders is composed of benign as well as more serious forms of neuroses, but exclusive of psychoses. It includes persons suffering from different degrees of depression, which periodically necessitates sedation and possibly eventually absence from work. Furthermore, this group comprises nervous affections which cannot be characterized as neuroses. The conditions to be included in this group are neurotic disorders that have been durable, even if they have been of varying intensity and symptomatology, and that have no assignable organic ground for the neurotic disorders occurred. In consequence, persons, who by a single medical examination or consultation have complained of various nervous symptoms, but otherwise have been free from such symptoms, have not been included in the present study.

Group 2: Diseases in digestive organs consisting of the items (a) ulcus ventriculi s. duodeni, (b) peptic symptoms without ulcus and (c) other diseases in the digestive organs, such as disorders of more indefinite character in the stomach and in the large intestine (colon); in which case it is presumable that organic alterations (as stomach or intestinal catarrh) have occurred; but by which disturbances of the stomach function and of the colon have been accompanying reasons for the sufferings.

Group 3: Includes coronary diseases, but only cases denoting symptoms of angina pectoris or of infarctus cordis.

In addition to the yearly medical routine examinations, I made a more extensive investigation in 1952 including housing and sleeping problems, and also some particular examinations of blood when I found it necessary.

Moreover, this study has been based upon examinations made by the consultational visits that I received at the medical offices of the factories besides the routine examinations, made there ex-officio by the ordinary visits.

A Comparative Study of the Health of Day- and Shift-Laborers

The examination of the present material has been favored by the fact that there are about the same number of persons examined in each group.

Even the age distribution within the groups including the 345 day- and 380 shift-laborers allows a comparison of these groups.

The results from these investigations are presented in Table I.

TABLE I.
A COMPARISON BETWEEN DAY- AND SHIFT-LABORER

	345 Day Labor	380 Shift Labor
Neuroses and Nervous Disorders	13.0%	10.0%
Ulcus Ventriculi S. Duodeni	7.5%	6.0%
Peptic Symptoms Without Demonstrable Peptic Ulcer	6.6%	10.0%
Other Digestive Diseases	11.62%	10.2%
Angina Pectoris and Infarctus Cordis	2.6%	1.1%
With Symptoms	34.8%	34.0%

This table demonstrates the results of a clinical study of day- and shift-laborers who have been followed up for years. It is seen that there is little difference in frequency of neuroses and nervous disorders, digestive diseases or angina pectoris and cardiac infarction among shift-laborers as compared with day-laborers.

In order to obtain a more reliable basis for an evaluation of the clinical study the days of absence of every laborer has been registered throughout one year (1952). The registration includes absence during one or more days. Even consultations of the local physicians, those in general practice and specialists, are registered during the same year. Attempt has been made to establish exact diagnoses. In doing this I have been kindly assisted by the physicians as well as by the local health insurance company.

It should be noted that six day- and seven shift-laborers left their work at the factories during the year mentioned. Therefore, the study of absence and consultations will comprise 339 day- and 373 shift-laborers.

In addition, all men who at the beginning of 1952 were between 50 and 65 years of age have been followed up as regards diseases, consultations and absence from work. This has been done by means of information given by the local health insurance company where all medical information during the 13 years 1939 to 1951 has been reliably registered.

Only the number of men having worked continuously at the factories during the years mentioned are included in the registration; a total of 96 day- and 75 shift-laborers. The results appear in Table II.

This table shows that in 1952 absence owing to disease averaged 9.26 days for day-laborers and 6.25 days for shift-laborers respectively, 30% higher for day-laborers.

The number of medical consultations seem to be higher for day-laborers (3.72) than for shift-laborers (3.39).

As to the laborers aged 50 to 65 years, a long-time observation was made during 13 years. In this long-time observation we have no information about short-term absence (absences of one, two or three days duration). For that reason a lower number of days of absence for

TABLE II.
ABSENCE DUE TO ILLNESS AND MEDICAL CONSULTATIONS BY DAY AND SHIFT LABORER

	Number	Years of Observations	Days of Absence Caused by Illness Pr. Year Pr. Lab.	Medical Consult. Pr. Year Pr. Lab.
Day-Laborer Regular	339	1 (1952)	9.26	3.72
Shift-Labor	373	1 (1952)	6.25	3.39
Day-Laborer Regular	96	13 (1939-51)	7.46	3.13
Shift-Labor	75	13 (1939-51)	5.17	2.50

the diseased will be noted; on the average 7.46 days for each day-laborer and 5.17 days for each shift-laborer. The absence of the day-laborers is 30% higher than that of the shift-laborers. The day-laborers have a comparatively higher average number of medical consultations.

Table III indicates the relation between absence and medical consultations due to mental disorders, digestive and cardiac diseases.

From the clinical study it appears that shift-laborers had, relatively, no higher frequency of mental disorders. This is significant with regard to absence and consultations. From Table III it will be seen that as compared with the day-laborers, the shift-laborers were on an average absent more in 1952, but less in 1939 to 1951. There was even a decrease in the number of consultations resulting from mental diseases.

Obviously, in 1952 there is more absence from work due to diseases in the digestive organs among the shift-laborers. On the other hand, there was less absence in this group than that found in the elder part of the day-laborers, registered during 1939 to 1951.

For the two periods mentioned, the shift-laborers have, relatively, a somewhat higher number of consultations, but the difference is not significant.

Table III is indicative of the fact that the shift-laborers in question suffer more from diseases in the digestive organs. In this respect the difference is not of such an importance that it militates against the results of my clinical conclusion that the frequency of such illnesses is practically equal for both categories of laborers considered.

Regarding the occurrence of cardiac diseases (Table I), more day-laborers than shift-laborers suffered from angina pectoris and infarctus cordis, although the average age within the two groups compared were almost the same. However, considering the low figures 2.6 and 1.1% respectively, the difference noted may hardly be significant. On the other hand it appears that absence from work and medical consultations due to heart diseases were more frequent in day-laborers. According to Table III, the frequency of absence from work due to illness was 10 times as great for the day-laborers in 1952 as for shift-laborers. As regard the elder group observed for 13 years, the frequency was twice as high in day-laborers. The number of medical consultations shows a similar distribution. This fact combined with the increased frequency of cases of angina pectoris and infarctus cordis among day-laborers, may show a significantly increased morbidity from the said diseases among them.

Considering these facts, one may say that absence from work and medical consultations for all laborers during one year, and for a limited number of the same in the course of 13 years, confirm my conclusions regarding the frequency of neuroses and nervous disorders, illnesses in the digestive organs, and angina pectoris and infarctus cordis among day- and shift-laborers.

It is already stated that with regard to diseases there was notably less absence from work among shift-laborers than among day-laborers. The essential reason for this is a reduced number of diseases of organs of movement and of injuries exposed to, by the former than the latter group of workers. The average yearly absence due to illness is 134.4 and 95.1 days less per 100 among shift- than day-laborers.

A clinical study such as the present one, including a follow-up of 345 day- and 380 shift-laborers during several years, and an analysis of the reasons for absence from work and of medical consultations, reveals neither signs of a higher rate of morbidity as regards maladies of a particular kind, nor a decrease in the state of health for the second group of laborers as compared with the first.

Considering the results of the investigations, it is of great importance to observe the fact that the 380 shift-laborers as subjects of study afford exquisite material since 350 laborers who were formerly occupied with shift-work at the three factories after varying intervals of time were transferred to day-work.

TABLE III.
ABSENCE AND MEDICAL CONSULTATION CAUSED BY MENTAL DISORDERS AND DIGESTIVE AND CARDIAC DISEASES

	Years of Observation	Number		Days of Absence Pr. Year Pr. 100 Laborer		Medical Consultations Pr. Year Pr. 100 Laborer	
		Day-Lab.	Shift Lab.	Day-Lab.	Shift-Lab.	Day-Lab.	Shift-Lab.
Mental Disorders	1	339	373	26.5	46	19	11
	13	96	75	42.0	25	17	10
Digestive Diseases	1	339	373	71.0	107	23	30
	13	96	75	97.0	65	29	33
Cardiac Diseases	1	339	373	82.5	8.5	26	1.5
	13	96	75	21.0	10	4	2

Day-Laborers Who Previously Have Been Regular Shift-Laborers

The 350 laborers who were transferred from regular shift-work to day-work include 128 laborers in whom the reason for this change was some disorder connected with regular shift-work. In this group there has been some more or less serious medical indication that made the change necessary. A medical evaluation of these indications will be of considerable interest.

Table IV demonstrates the frequency of neuroses and nervous disorders, diseases affecting the alimentary tract and further angina pectoris and coronary infarction in this group as compared with the frequency of the same maladies in day-laborers who had not previously been subjected to regular shift-work.

TABLE IV.
A COMPARISON BETWEEN DAY- AND "A" DAY-FORMERLY SHIFT-LABORER

	345/Day Laborer	128 Group "A" Day-Formerly Shift-Laborer
Neuroses and Nervous Disorders	13.0%	32.5%
Ulcus Ventriculi S. Duodeni	7.5%	19.0%
Peptic Symptoms Without Demonstrable Peptic Ulcer and Other Digestive Diseases	17.0%	32.5%
Angina Pectoris and Infarctus Cordis	2.6%	0.8%
"With Symptoms"	34.8%	67.0%

Among the 128 previous regular shift-laborers there are, according to Table IV, two and one-half times as many cases of neuroses, nervous disorders and peptic ulcer and twice as many cases of other diseases of the alimentary tract as compared with the group that had only been subjected to day-work. The frequency of angina pectoris and coronary infarction, however, is less in the former group than in the latter.

Table V demonstrates how many days each laborer has been absent from work because of disease during one year (1952). The table also shows the frequency of absence in a group of 36 laborers between 50 and 65 years of age who had been followed up for 13 years. The absence frequency is about the same in both groups of day-laborers. Table VI A and B shows the frequency of absence and consultations due to nervous and alimentary diseases.

Table VI A shows the results of the registration during 1952. Because four laborers left their jobs during the year, only 124 laborers are included in this investigation.

TABLE V.
ABSENCE CAUSED BY ILLNESS BY DAY-AND "A" FORMERLY SHIFT-LABOROR

	Number	Years of Observation	Days of Absence Caused By Illness Pr. Year Pr. Laborer
Day-Laborer	339	1	9.26
"A" Day-Formerly Shift-Laborer	124	1	10.60
Day-Laborer	96	13	7.40
"A" Day-Formerly Shift-Laborer	36	13	6.30

As it is seen from Table VI, this group showed a marked increase in the frequency of medical consultations due to nervous diseases. There was, however, no similar increase in the frequency of absence from work for the same reason. One must consider the possibility that a real increase in the frequency of nervous disorders may have been concealed by other diagnoses. It is clear that these 124 previous regular shift-laborers showed a significant increase in the number of shorter periods of absence due to ailments of the skeletal and muscular systems as well as of the respiratory tract, as compared with day-laborers. It is a common experience that nervous symptoms play an important role for such minor periods of absence due to the mentioned diseases.

TABLE VI.
ABSENCE AND MEDICAL CONSULTATIONS DUE TO MENTAL DISORDERS AND DISEASES IN THE DIGESTIVE ORGANS

Table VI A.	Day-Laborer	Day Formerly Shift-Lab.	Obs. Year	Days of Absence Pr. Year Pr. 100 Lab. Day Laborer	Days of Absence Pr. Year Pr. 100 Lab. Day Formerly Shift-Lab.	Number of Medical Consultations Pr. Year Pr. 100 Lab. Day Laborer	Number of Medical Consultations Pr. Year Pr. 100 Lab. Day Formerly Shift-Lab.
Mental Disorders	339	124	1	26.5	27	17	47
Digestive Diseases				71	208	23	35
Table VI B.							
Mental Disorders	96	36	13	42	30	19	13
Digestive Diseases				97	93	29	28

With regard to diseases of the alimentary tract there were three times as much absence from work as usual in 1952 in the group A day-laborers who had previously been regular shift-laborers. It is natural to regard the information read from this table as a confirmation of what is seen in Table IV, namely that the laborers who were transferred from regular shift-work to day-work for medical reasons showed a significant increase in disorders of the nervous and alimentary systems.

Table VI B shows the frequency of the same diseases expressed by absence and consultations in the group consisting of 36 laborers between 50 and 65 years of age who had previously been engaged in regular shift-work and who had been observed through 13 years. This group shows no increase in the frequency of absence or consultations as compared with day-laborers. The reason for this most likely is that a con-

siderable time has passed since they were shift-laborers and that the possible lesions due to regular shift-work are not permanent.

Turning now to the 222 day-laborers who have been previously engaged in regular shift-work and who by chance have changed to day-work (B day-laborers who had previously been regular shift-laborers), the 104 laborers who worked at "Det Norske Zinkkompani" as a group showed great similarities to the 128 A day previous regular shift-laborers referred to above. Among these 104 laborers there was a marked increase in neuroses, nervous disorders and alimentary ailments as compared with the day-laborers who had not been engaged in regular shift-work. The symptoms were, however, less marked than they were in the 128 laborers who were transferred from regular shift-work to day-work for medical reasons. The other 118 laborers who were included in the 222 day-laborers in the group all worked in "Det Norske Nitridaksjeselskap" and "Odda Smelteverk." The findings in this group were similar to those in the group including 345 ordinary day-laborers.

Most likely these conditions are due to the fact that "Det Norske Zinkkompani" is the youngest of these three factories. Therefore several of the 104 previous regular shift-laborers who work there are likely to have applied for this work because they did not fit well as regular shift-workers.

Does Regular Shift-Work Dispose toward Nervous, Alimentary or Heart Diseases?

The 380 previous regular shift-laborers referred to in this text constitute selected material. The fact that there is no increase in the occurrence of the diseases mentioned above does not prove that regular shift-work does not dispose toward such maladies.

The material may be appropriate to elucidate the problem if one compares the frequency of these disorders among the 345 day-laborers who have never been working in regular shift-work with the 380 regular shift-laborers and the 350 day-laborers who have previously been regular shift-laborers. This last group also includes all laborers who showed symptoms during shift-work but who have been free of symptoms since they changed working conditions.

It has to be mentioned that both the age distribution and the housing conditions are more favorable in day-laborers.

It is evident that regular shift-laborers, no matter whether they are or have been engaged in such work, have an increased morbidity by 40% with regard to neuroses and nervous disorders and by 34% with regard to ailments of the alimentary tract. On the other hand, the day-laborers have an increased morbidity with regard to heart diseases by 60%. In spite of those factors which tend to restrict the value of this comparison, it may be stated that regular shift-work predisposes to nervous and alimentary diseases. It is hard to give an explanation of the fact that heart diseases most often occur in day-laborers. There is a possibility that the kind of work to which the day-laborers are subjected as a rule is more psychically and physically stressing.

Sleep and Sleep Disturbances

One major difficulty connected with regular shift-work is to get enough sleep during the day following a night shift. There are two factors of special importance which make it difficult to sleep in the night-shift week: (1) difficulties in change of the usual 24-hour's rhythm and (2) difficulties in getting the necessary quiet conditions.

With regard to the first point, the individual variations are considerable. Some laborers are always able to sleep, while others not only have sleep difficulties, but especially so when they have to sleep during the day.

It is obvious that this type of laborer is not fit for regular shift-work. This fact is nicely demonstrated in this investigation when one considers that 90% of the 128 previous regular shift-laborers who were removed from such work for medical reasons, had developed sleep disturbances when they worked in shift while only 16% of them originally were suffering from such difficulties and a still smaller percentage after they had changed to day-work.

Table VII shows that sleep difficulties in this group were not due to bad housing conditions. As many as 84% of the laborers who lived in good houses developed sleep difficulties during regular shift-work. On the other hand there is the group consisting of 380 regular shift-laborers who stayed as such. Among them, 163 laborers had good houses while 114 lived in bad housing conditions. In the former only 15% and in the latter as many as 73% deveoped sleep disturbances during regular shift-work.

From this one may draw the conclusion that especially exogenous factors lead to sleep disturbances in this group of 380 laborers. Table

TABLE VII.
HOUSE CONDITIONS AND SLEEPING DISORDERS

	Number	Good Housing Insomnia	Bad Housing Insomnia
Dayworkers—Formerly Shift-workers. The Sleeping Disorders When Employed On Shift	128	84%	97%
Shift Workers	380	15%	73%
Day Workers	345	12%	18%

VII shows that the regular shift-laborers in this material are not more liable to develop sleep disturbances than those day-laborers who had good housing conditions. This analysis of the sleep difficulties in three different groups of laborers confirms the view that the reasons for sleep disturbances in regular shift-laborers are due to either exogenous or endogenous reasons.

Summary

Two groups of industrial laborers, the one consisting of 345 day-laborers and the second consisting of 380 regular shift-laborers, were followed up and subjected to medical evaluation. The age distribution were about the same in both groups. There was no increased morbidity with regard to disorders of the nervous or alimentary systems or with regard to the heart among regular shift-laborers. This group also on the whole showed a lower frequency of absence from work (30%) and medical consultations as compared with the day-laborers.

In the author's opinion the explanation of this is that the 380 regular shift-laborers represent a selected material because 350 previous regular shift-laborers have been transferred to day-work. Of these, 128 were removed for medical reasons. Within this group there is a marked increase in the frequency of nervous and alimentary diseases. There was, however, no increase in heart diseases in this group as compared with those day-laborers who had never been subjected to regular shift-work.

The study clearly shows that the reason some people were not able to go on with shift-work was lack of sleep.

There are two possible reasonable ways to fight sleep disturbances among regular shift-laborers. Such laborers who do not have the ability to change their 24-hours' rhythm should not continue as regular shift-laborers. Even good housing conditions will fail to cure their sleep difficulties. Those who are able to continue as regular shift-laborers will be less apt to develop sleep disturbances if their housing conditions are good.

Greatest Single Cause of Absenteeism

The disease that disables more people in Michigan than any other is, ironically, one that is not taken very seriously. That disease is arthritis.

In what way is arthritis underrated? For one thing, too few people realize that this is Michigan's most widespread chronic disease, claiming more than 450,000 residents as its victims. It is acknowledged by medical authorities as the number one crippler.

Yet a surprising number of people think of arthritis as a harmless "aches and pains" ailment that affects only old people. Here too, arthritis is tragically underestimated. The fact is — rheumatoid arthritis, the most crippling form of the disease, finds most of its victims in the 20 to 45 age group, those in the very prime of life. There are over 200,000 children suffering across the nation from arthritis.

Then there is the pain. At its peak, rheumatoid arthritis produces unimaginable pain. For some suffers, even the slightest motion of a bedsheet on the body is agonizing. As one desperate victim moaned, "No, arthritis doesn't kill you — you just wish it would!"

How many realize that arthritis is the greatest single cause of absenteeism in American industry, causing more time lost from work than all accidents combined? Who would believe that this disease costs the American tax paying public an estimated $125 million each year in subsistence allowances to arthritics who cannot work and that the total wage loss amounts to more than $1 billion? Yet these are the facts about this greatly underrated menace to our nation's health.

A little more than 10 years ago, the Arthritis and Rheumatism Foundation was founded in Michigan. Although it has become a nationwide organization, much of the leadership in research and rehabilitation in arthritis comes from the Michigan chapter of the Arthritis and Rheumatism Foundation.

Having two prime objectives, the Foundation seeks to expand its treatment services so that as much relief as possible may be brought to those who suffer now. The other aim is to find the cure that will wipe out arthritis misery for all time. To this end the organization supports key research studies in university and hospital laboratories throughout the state. Care today and a cure tomorrow is the Foundation's watchword.

—*Holland* (Mich.) *Sentinel*, June 18, 1959.

Abstracts

"Primary Tendon Repair"

by MICHAEL L. MASON, M.D., in *Journal of Bone and Joint Surgery*, June, 1959

Dr. Mason has attempted to clarify the somewhat complicated and controversial issue of primary tendon repair by dividing the pertinent considerations into three broad categories.

The first of these includes facilities such as equipment, personnel and anesthesia, and includes the experience of the surgeon. The second broad category is concerned with the general condition of the patient. The third category is the local condition of the wound, including duration since injury, nature of the type of wound, specific location of the division of the tendon, etc.

With respect to the first category, Dr. Mason points out that there is often fear that if repair is not undertaken the surgeon will be accused of negligence. Too often the result is that the primary repair is undertaken by a surgeon with inadequate experience, inadequate anesthesia and without the advantage of a bloodless field. It is rare that proper instruments and suture materials, adequate assistance, good light and proper aseptic conditions are available in the ordinarily equipped emergency room.

Perhaps the general condition of the patient may not be properly assessed, and it may be difficult to obtain a good idea of the possible primary and secondary contamination which has occurred. It may be difficult at times to know the extent of the first aid rendered and whether the wound was probed or inspected under imperfect conditions of asepsis.

The third category of local factors concerning the wound is of the greatest importance. Sharply lacerated injuries with division of tendons may permit primary repair, whereas crushing injuries with damage to the skin, and perhaps with open fractures, are seldom amenable to immediate repair.

The actual location of injury to flexor tendons is of great importance. In general, the flexor tendons are divided into a zone distal to the fibrous distal sheath, the digital sheath area proper, the palmar area and lacerations of tendons in the wrist. The greatest disagreement, as Dr. Mason points out, concerns the area which has been called "no-man's land." This is the area in which two sublimis slips and the profundus tendon lie in the fibrous digital sheath and extends from the insertion of the sublimis tendon in the base of the middle phalanx to the proximal end of the flexor sheath in the palm. Many surgeons believe that primary repair in this zone, even with all conditions favorable, should never be attempted. Others, however, believe that under certain favorable circumstances repair may be undertaken. The implied "favorable conditions" are that the duration since injury is minimal, probably not more than two hours, skin coverage is adequate, contamination has been minimal, there are no associated bony injuries, adequate equipment, assistance and anesthesia are available and the surgeon has a complete knowledge of the various types of incisions required for properly extending wounds and inspecting proximal or distal areas and he has mastered the careful, gentle technique necessary to achieve return of function following repair.

Dr. Mason believes that very few injuries actually conform to these strict criteria and that if the injuries do not conform, or if there is any doubt in the surgeon's mind, it is probably best simply to cleanse and close the wound. Definitive reconstruction may then be undertaken as an elective procedure after the skin has healed completely and any inflammation of underlying tissues has completely subsided.

—JOHN H. SCHNEEWIND, M.D.

"Specific Polypeptide Substrates in Enzymatic Determinations"

by G. L. NARDI, M.D., in *Surgery*, July, 1959

Difficulty of diagnosis in pancreatic disease has lead the clinician to place considerable importance on abnormal elevations of pancreatic enzymes in the blood. Lack of a reliable measure of proteolytic activity has resulted in reliance on amylase and lipase levels, neither of which is exclusively pancreatic in origin. The availability of synthetic polypeptide substrates with amide linkages vulnerable only to specific enzymes has enabled us to devise a direct method for the quantitative analysis of circulating serum trypsin, an enzyme produced exclusively by the pancreas. Although this test may prove to be of value as a diagnostic aid in pancreatic disease, especially in carcinoma, of equal or of greater importance is the concept of utilizing specific synthetic substrates in clinical diagnosis.

The sera of 180 patients with and without pancreatic disease were analyzed by this method. These were classified into one of six main diagnostic groups: (1) no pancreatic disease, (2) pancreatitis, (3) carcinoma of the pancreas, (4) biliary inflammatory disease, (5) gastroduodenal disease, (6) abdominal pain, cause unknown.

Group (1) 59 patients. The average value for the entire group was 62 units. Seven had values of more than 100 and were considered false positives.

Group (2) 57 patients. Six had normal values, however some of these were done during convalescence when amylase values were returned to normal. They were considered false negatives. The average for the group was 245 units.

Group (3) 12 patients. No false negatives. The average for the entire group was 338 units, the highest of any group. By way of contrast only two of the 12 had unusual elevations of either serum amylase or lipase.

Group (4) 21 patients.

Group (5) 19 patients.

Group (6) 12 patients.

The findings in four and five suggests that they are quite comparable to the control group without pancreatic disease. In patients with pancreatitis, whether primary or associated with duodenal disease, there was generally good correlation between elevations of trypsin and amylase. —W. A. WICHOWSKI, M.D.

"Pituitary-Adrenal Response Following Trauma to the Isolated Leg"

by R. H. EGDAHL, M.D., in *Surgery*, July, 1959

The mechanisms by which operative trauma or burns lead to increased secretion of ACTH from the pituitary are the subject of controversy at the present time. The experiments described in this monograph provide strong evidence to support the conclusion that the pituitary-adrenal activation following burns or operative trauma is dependent upon peripheral nerve impulses from the damaged area. There is no support for the concept that a substance referred to as a wound hormone is produced locally in the wounded area which either directly or indirectly results in ACTH release.

Severe thermal trauma results in the stimulation of peripheral nerves and impulses from the nerves pass up the spinal cord to higher brain centers. After nerve impulses reach the medulla, the pathways leading to ACTH release by the pituitary are incompletely elucidated. Recent work shows that the "isolated pituitary" dog — an animal with brain removed down to the pituitary and transection of brain stem at the level of the inferior colliculus — often responds to operative trauma with increased adrenal venous steroid output. Therefore although the hypothalamus clearly plays an important role in either the production or the release of ACTH under normal circumstances, it is possible that an area in the central nervous system between medulla and midbrain produces a neurohumor which also can result in ACTH release.

It has been suggested that the circulating blood level of adrenocortical hormones is a major factor in the control of ACTH release by the pituitary. That this is probably not an essential factor in the ACTH release following nervous stimulation is the demonstration that the maintenance of the levels of 17-hydroxycorticosterone does not prevent the increase in adrenocortical secretion following the stimulation of a peripheral nerve.

The experimental results of burning the dog with the isolated leg indicate that the adrenocortical response to peripheral operative trauma and severe burns is due exclusively to peripheral nervous activation and that there is no neurohumoral contribution from the wounded area.

—W. A. WICHOWSKI, M.D.

Books

Hey Groves' Synopsis of Surgery

Ed. *Sir Cecil Wakeley*, 15th Edition (Baltimore: The Williams and Wilkins Company, 1958)

This book, originally published in 1908, is now in its 15th edition, and is intended as a review, in brief, of surgical diseases and treatment. Though wide of scope, and written in a concise manner that allows for reading ease, some of the outlined methods of treatment are too brief to be of value to one not already acquainted with the disease. Some methods of treatment considered optimal by the author are debatable, and there is little mention of postsurgical complications.

However, as this book is intended primarily as a review for house officers and those who are not able to keep up with more voluminous literature, it well serves that function.

— CHESTER C. GUY, M.D.

The Mouth: Its Clinical Appraisal

***A. B. Riffle, D.D.S.* (Philadelphia: J. B. Lippincott Co., 1959) $3.50**

This little textbook is designed for both the dentist and physician. It presents a technique for a complete and comprehensive description of the medical side of a thorough mouth examination. All too often the dentist depends on the physician for diagnosis of soft tissue conditions, the physician in turn depends upon the dentist. This book points up the responsibilities of both. It presents "a practical yet comprehensive prescribed procedure for our examinations — a routine approach — both in the hospital and in the private office."

Six chapters and a conclusion comprise the text and are arranged in logical sequence.

The technique which is presented is done so in a brief, concise and well illustrated manner. An excellent reference for students and practitioners. —EDWARD R. ASTON, D.D.S.

Modern Dermatologic Therapy

Ed. *Thomas H. Sternberg and Victor D. Newcomer*, (New York: McGraw-Hill, 1959) $10.00 illustrated

This book by many contributors, but ably edited, comprises papers presented before a conference on dermatology. On this account it is not a comprehensive textbook of therapy in dermatology. It is spotty, but the spots are large. If one of the "spots" coincides with a particular need then this book takes on double worth. In order that the wide but still restricted coverage may be known the titles of the major presentations are shown: Management of Systemic Lupus Erythematosus, Discoid (Cutaneous) Lupus Erythematosus, Generalized Scleroderma (Progressive Systemic Sclerosis), Dermatomyositis, Polymorphous Light Eruptions, Hyperpigmentation and Depigmentation, Emotional Factors in Dermatologic Disorders, Psychiatric Treatment of Psychocutaneous Disorders, Treatment of Psychocutaneous Disorders by the Dermatologist, Seborrheic Dermatitis, Psoriasis, Acne Vulgaris, Miliaria, Eczematous Eruptions, Occupational Dermatoses, Atopic Dermatitis, Pruritis, Acute and Chronic Urticaria, Pemphigus, Cutaneous Infections Caused by Staphylococci and Streptococci, Superficial Fungous Infections, Systemic Mycoses, Common Viral Diseases of the Skin, Syndromes Related to Bacterial Allergy and Hypersensitivity, Steroids in Dermatology, Antibiotics Other Than Penicillin in the Treatment of Syphilis.

Dermatologists avidly espouse the well proved new in therapy but never slough off the old. In this book, calamine lotion, that venerable agent with its long pink whiskers, still is worshiped.

The Plasma Proteins

***Paul G. Weil, M.D.*, (Philadelphia: J. B. Lippincott, 1959) $3.50**

Good as this book is in fulfilling its declared purpose, its appeal, with the exception of one chapter, is not to the usual industrial physician. That exceptional chapter deals with plasma protein substitutes such as may be utilized in the prevention and treatment of shock. Since surgical shock is always a threat in industrial medical practice, every industrial physician needs the reassurance that this chapter affords.

After marking the waning use of whole plasma because of some prospect of homologous serum jaundice among other reasons, the author notes: "Various plasma expanders are satisfactory when used in the amounts mentioned. If hemorrhage is severe enough to require transfusion of more than 1,000 ml in order to restore blood volume and blood pressure, then blood itself must be used to restore oxygen capacity in addition to plasma volume expansion. A further word of caution needs to be added with respect to the use of Dextran which in amounts of more than 1,000 ml has been known to induce a bleeding tendency.

"If the plasma expanders were more widely used within the limitations described herein, there would be a reduction in the incidence of transfusion complications and reactions due to contaminated blood (virus hepatitis, etc.), isoimmunization to Rh and related factors, and other transfusion accidents. Last but not least, their use, by sparing blood, would make more blood available for the treatment of massive hemorrhage, e.g., gastrointestinal bleeding in which condition blood, only blood, and blood in large quantities is required.

"The plasma expanders are available under a variety of trade names in a 6% solution in isotonic sodium chloride. Dextran is marketed under the name Gentran, Expandex, Plavolex. PVP is marketed as Subtosan and PVP-Macrose. Gelatin is available as Plasmoid and Gelatine Solution. The last-named preparation gels at room temperature and may have to be warmed before and during infusion. They are sterile, pyrogen-free and for all practical purposes, nonantigenic. Except for the bleeding tendency which may follow the use of more than 1,000 ml of Dextran, they may be safely administered at the rate of 30 ml per minute."

Re-Education of the Injured Shoulder

by *R. Barrie Brooks* (Baltimore: Williams & Wilkins Co., 1959) $3.50 illustrated

Whatever physician undertakes the medical care of any severe shoulder injury or any injury to the upper extremity in which the shoulder may become involved assumes a major responsibility. That area is a treacherous one as to the ultimate outcome. Nearly always the services of the physiotherapist are contributory to best results. This book is the record of one physiotherapist's experience with 779 shoulder cases. The author lends this emphasis: "The one outstanding principle which has emerged from this study involving 779 patients, has been the necessity for movement at the earliest possible moment. It is not sufficient to tell the patient to use his arm so that it will not become stiff, even if the importance of avoiding pain on movement is explained. The former advice may encourage indiscriminate use with painful consequences, while the latter may engender stiffness through timidity.

"Injuries of moderate severity should have physiotherapeutic supervision until the exercise program can be diligently continued at home, after which the patient can be seen at intervals for check and progression.

"Patients should be taught the art of dressing without discomfort, putting the injured arm through a coat sleeve first and reversing the procedure on removal. Garments over the head can be managed in the stooping position.

"The exact diagnosis of the extent and location of acute cuff lesions is not only extremely difficult, but is of little consequence when treated conservatively. Treatment follows a similar pattern in all cases within the principles laid down."

Arthritis, General Principles, Physical Medicine, Rehabilitation

Ed. *Edward W. Lohman*, (Boston: Little, Brown and Company, 1959) illustrated, $9.50

Among all chronic diseases, with the exception of mental illness, rheumatic diseases take the greatest toll in morbidity. Ten times more persons are disabled by rheumatism than by either tuberculosis or diabetes, and seven times more than from cancer. Statistically, the extent of rheumatic disease in the United States is a rough calculation. Probably the most familiar survey is that which was conducted by the United States Public Health Service in 1938; at that time it was estimated that nearly 7,000,000 persons were suffering from some type of rheumatic disease. More recently, in 1952, Woolsey, of the United States Public Health Service, reported results from a similar survey conducted among 25,000 households in 68 sample areas of 42 states. His findings corroborated those of the earlier sampling. On the basis of the sampling, he estimated that in 1951 approximately 10,104,000 persons beyond the age of 14 years exclusive of persons with rheumatic fever and rheumatic heart disease, were afflicted with rheumatism.

Arthritis is a merciless disease, the worst forms of which strike in the prime of manhood or womanhood, having not the virulence to kill, but only to cripple, disable and wrack with pain. Most chronic diseases, on the other hand, in their progressive course ultimately culminate in death; hence, in long-term statistical estimations, these diseases, despite their rising incidences, will eventually, by virtue of their mortality rates, tend to level off in incidence. Arthritis, however, with its low mortality may be expected in the years ahead to increase in incidence and to swell the ranks of those unfortunate enough to be afflicted and disabled by chronic disease. It is appropriate and timely, therefore, that this volume is devoted to the problems of the arthritic and is specifically intended to demonstrate the many resources, medical and other, which may be mobilized in a positive and dynamic attack on arthritis.

The heart of this book may be found in one sentence in a forword by Dr. Howard Rusk. "In this volume for the first time, the problems of the patient with arthritis rather than the problems of arthritis are considered." This book pursues that one idea, consistently, elaborately and constructively.

Modern Safety Practices

by *Russell DeReamer* (New York: John Wiley & Sons, 1958) $7.00 illustrated

This book is so modern that its author records doubt that accident proneness, that over-worked concept in relation to accident occurrence, is of any high frequency or any great significance.

However, that is not the only sacred cow connected with accidents that is made to stand up to be milked.

The title of this book more precisely might have been "Modern Industrial Safety Practices" since its coverage almost exclusively is devoted to that aspect of safety. Yet it is readily discernible that many of the principles laid down in this book are applicable to safety practices everywhere, whether in the home or on the highway.

Repeatedly the author and his publisher make use of the term "pinpointing." That may not be amiss but quite appropriately the author uses a pile driver in his pinpointing. There have appeared few statesmen and fewer statesmanship books in the world of safety. All too often authors have limited themselves to the hewing of small chips and then garnering them chapter by chapter. This author, on the contrary, thinks in terms of forests and there are no chips. There is unending emphasis upon relationship between safety and good industrial management practices. At all times human relations in safety practices are moved to the fore.

The five major divisions of this book are: 1. Safety Philosophy and Principles, 2. Creating and Maintaining Safety Awareness, 3. Developing Safe Working Conditions, 4. Appraising, Analyzing and Measuring Safety Performance and 5. The Safety Engineer.

These major headings are more or less stereotyped and smack of aridity. Be not dismayed by any such implication. The flavor of this book in all of its newness and conviction is to be found in the engaging details chapter by chapter. This satisfactory book invites only one reservation. The author minimizes the tremendous volume of exposures deriving from the field in which the industrial hygienist works. Much too little is presented as to the perils of dust, gases, vapors, rays, abnormal atmospheric pressures and thermal abnormalities, all of which cause more than their share of accidents.

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September, 1959

VOLUME XXVIII

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Abel and Tri.

The lay press, in some weeks recently passed, has devoted many columns to the exploits of two monkeys, Abel and Baker, the only animals thrust into space to return and tell of their adventures in their own ways. And then, a few days later, this same press recorded the death of Abel, this monkey of all monkeys most distinguished among men. One electrode properly embedded beneath the skin for the purpose of necessary data recording had contributed to an infection in that area. A minor operation was in order. For the general anesthetic, trichloroethylene was employed. During the course of the operation cardiac fibrillation appeared, presumably due to trichloroethylene, and exit Abel.

Abel's contribution to man and man's science by soaring into space is his major one. A smaller contribution, but one not to be overlooked, is the tragedy of this anesthetic death. Industrial physicians for decades have proclaimed, preached, written, testified and demonstrated that trichloroethylene is far from being a chemical harmless for man. In some of its actions "tri" is more harmful than chloroform. True it is that trichloroethylene long has been in wide use as anesthetic, notably in England and notably in obstetrical practice. True it is that in this country many official recognitions and sanctions have been extended to trichloroethylene as a useful general anesthetic. So no degree of condemnation for the Army surgeons in this mishap.

Dr. von Oettinger, of the Public Health Service, writing about the toxicity of halogenated hydrocarbons includes this paragraph in the midst of more favorable ones about trichloroethylene as a general anesthetic, and after some mention of cardiac fibrillation as a potentiality: "As pointed out by Johnston (1945), Wagner (1946), Brittain (1948) and others, careful premedication with morphine, atropine and barbiturate is essential for a successful and safe trichloroethylene narcosis. Most observers agree that trichloroethylene narcosis should not be pushed too far lest complications occur. Wagner (1946) emphasized the ease with which analgesia may be produced, but found it difficult to obtain surgical anesthesia. Gordon and Shackleton (1943) cautioned against the indiscriminate use of trichloroethylene and a similar warning was given by Enderby (1944)."

The possibility is that Abel, the space traveler, eloquent in death, may have provided more conviction than 100 industrial physicians in the insistence that surely there must be better anesthetics than trichloroethylene. After all there is no evidence quite as convincing as a dead man or, in this instance, a dead monkey.

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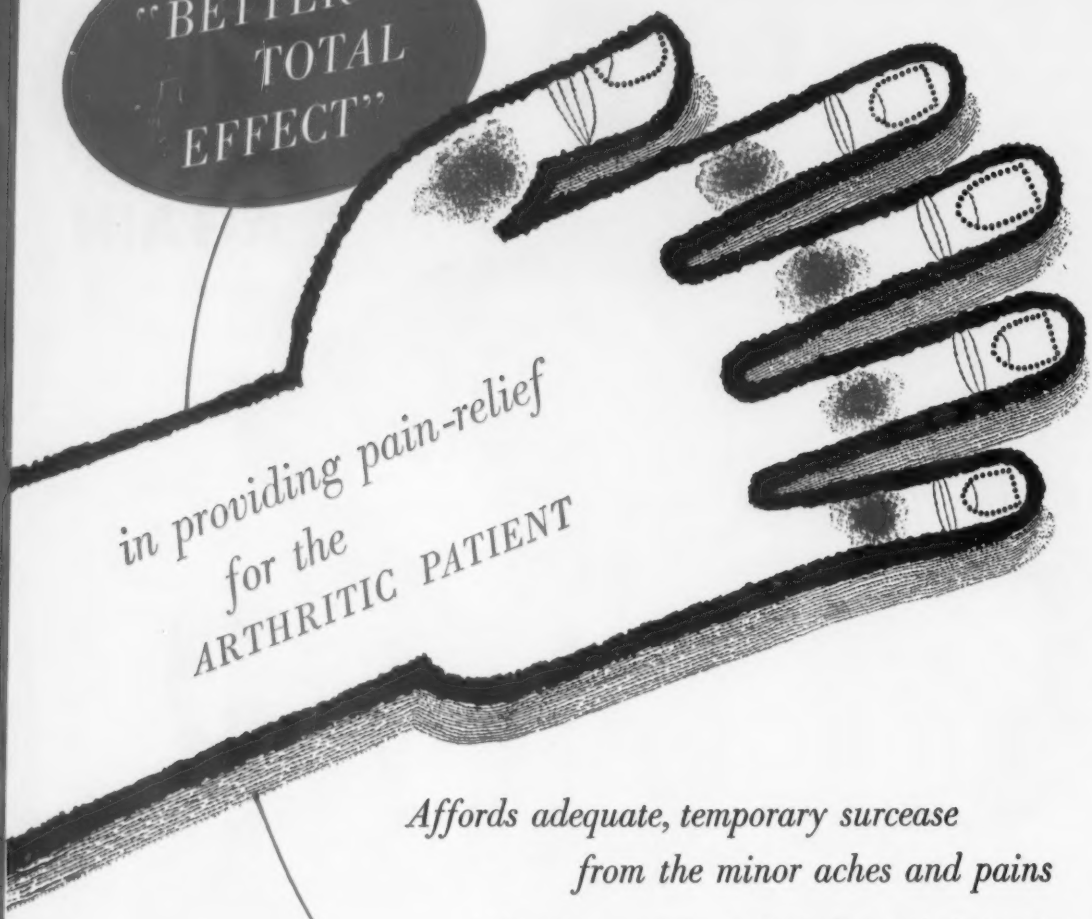

Affords adequate, temporary surcease from the minor aches and pains

An important assay of an analgesic is its total effect on the patient suffering pain.[1] Anacin Tablets afford prompt pain-relief and . . . by reducing nervous tension and anxiety . . . exert a better total effect on the patient than aspirin or any buffered aspirin. The physician should find the inotropic action of Anacin helpful in relieving voluntary muscle spasms encountered in rheumatoid arthritis — and in leaving the patient more relaxed. Anacin also effectively reduces inflammation and is superior to aspirin in reducing fever. Being sodium-free, the technique of 'massive therapy' may be successfully employed with Anacin without causing sodium accumulation or edema. Tolerance is excellent.

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NEW YORK, N.Y.

Reference: 1. Hardy, James D.: *The Nature of Pain*, Journal of Chronic Diseases, Vol. 4, July 1956.

Something in the Wind

Tokyo and Paris streetcar and subway employees protest against the new scented germ killer sprayed in their cars. Their wives, who can't believe motormen could smell so sweet, accuse them of philandering. —*Industrial Relations News*, July 25, 1959.

The Weight Problem

Although studies by some insurance companies have shown overweight to be more common in women, more recent studies by the Public Health Service indicate that overweight occurs nearly twice as frequently among men than it does among women in the white population, according to *Patterns of Disease*, a booklet published monthly by Parke, Davis & Company for the medical profession.

Among nonwhite persons, obesity is more prevalent among women than it is among the males. However, the incidence of overweight is believed to have declined among women and increased among men in recent years.

Familial tendencies play a role in obesity. When both parents are of normal weight, only 10% of the offspring can be expected to be overweight. When one parent is obese and one is of normal weight, however, 50% of the offspring may be overweight. If both parents are obese, 80% of offspring may be overweight.

The overweight state is influenced apparently not only by environment but also by genetic factors. Studies of identical and of fraternal twins indicate that food habits are not the main factor in obesity in families.

Overweight does not always mean obese. A person whose weight is 20% above the normal, for his skeletal build, is considered to be obese. In one study of overweight men, 44% were found not to be obese, 51% were described as moderately obese, and 5% very obese.

Standard height-weight tables are not the best indication of obesity. The scientific method of determination uses specific gravity and skin-fold measurements to estimate excess subcutaneous fat.

Heart and artery diseases are often associated with extreme overweight. Advanced atherosclerosis is three times more prevalent and coronary artery disease is more common in obese individuals than among those who are underweight. Comparison of persons in the same age group shows that sustained hypertension is twice as frequent among obese persons as among those of normal weight. Other diseases which seem to be more prevalent among overweight persons include anemia, gall bladder disease, diabetes and liver disease.

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Operation is fully automatic with selective sterilizing cycles from 3 to 60 minutes. Cools and dries instruments or supplies by exhausting steam and residual water back into water reservoir—NOT into room.

The 613-R, with greater capacity, accommodates three large trays (6″ x 13″). Handsome, all stainless steel construction is durable and easy to clean. Other features include a Safety-Lock Door, Adjustable Thermostat and Accurate Temperature Gauge. Automatically burn-out proof.

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Obesity shortens life, and the greater the amount of overweight, the higher is the mortality rate. Among persons in the 45 to 50 year age group, 10 excess pounds increase the chance of death by 8% above normal. Thirty excess pounds increase the chance of death by 28%, and 50 excess pounds, by 56%.

Performed daily or regularly, exercise can bring about loss of weight. Walking for one-half hour per day can result in a weight loss of five pound over a year. Similarly, a half hour daily of handball or squash can, over the same period, account for a 16-pound weight loss, and splitting wood, for a 26-pound loss. Since the energy cost of exercise is proportional to body weight, the overweight person will consume more calories than the slender person performing the same exercise. For example, a person who is 20% overweight will expend approximately 20% more calories in walking, playing handball or squash, etc. than the normal or underweight person.

In weight reduction, if normal weight can be maintained for six months to a year, it is likely that the individual will keep his weight down for a long time.

Deafness Compensation Defeated

A bill to provide workmen's compensation benefits for occupational deafness was killed by the Wisconsin state senate Thursday amid charges that it would cost Wisconsin industry 256 million dollars in the next few years. The bill would have enabled a person deafened by noisy working conditions to collect benefits even if he stayed on the job.

The bill also would have extended the payment period for total deafness from 180 to 333⅓ weeks and from 36 to 50 weeks for deafness in one ear, as well as liberalizing the tests for deafness.

After killing the measure, the senate passed and sent to the assembly a bill to extend the payment period for total deafness to 216 weeks. The bill, requested by the workmen's compensation advisory committee, also would raise the average weekly earnings schedule on which the payments are computed.

—*Milwaukee* (Wis.) *Journal*, June 26, 1959.

Straighten Them Out

What can you do about the "problem" employee? About 20% to 25% of employees in most large organizations are maladjusted, unable to bear efficiently the strain of their jobs. Some suffer from chronic emotional disturbances, others are only temporarily troubled. These problems lead to accidents, absenteeism, lateness, substandard work, vandalism, goldbricking and malingering. A General Motors study, for example, shows that 85% of medical services are used by only 30% of employees, a high percentage of whom are emotionally disturbed.

Some of the nation's large companies have instituted psychological and psychiatric programs to cope with these problem employees. These include American Cyanamid, Du Pont, American Viscose, Caterpillar Tractor, Metro-

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the terrible cost[$] of dysmenorrhea

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You can cut lost time in your organization by making sure 'Edrisal' is in the dispensary. A combination of Benzedrine® Sulfate—which is both antidepressant and antispasmodic—and two highly effective analgesics, 'Edrisal' is virtually specific in dysmenorrhea.

It relieves the depression, the cramps, the pain.

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politan Life, and Eastman Kodak. These programs pay off. Consolidated Edison estimates it recovers four times its investment in its program for rehabilitation of alcoholics through reductions in absenteeism, sick pay and disability payments.

Here's how American Cyanamid's program, headed by psychiatrist Dr. Walter D. Woodward, works. Dr. Woodward spends about one-third of his time treating emotionally disturbed employees. This work is limited to examination and brief psychotherapy. For more intensive treatment, the employee is referred to outside psychiatrists — 80% of the cost of outside treatment, up to $15,000 a year, is covered by the employee's health insurance.

About 75% of the employees Dr. Woodward treats are self-referrals, the rest are recommended by plant physicians. He visits these medical officers regularly for orientation sessions. They are capable of handling most of the minor emotional problems that arise. If not, they themselves can refer patients for outside help.

A second phase of Dr. Woodward's work involves informal consultation with company executives. These meetings deal with managerial problems concerning human relations, especially those in which emotionally troubled employees are involved.

Smaller companies of course, may not require a full time staff psychiatrist or industrial psychologist. Some use the part time services of a local consultant in private practice. Others train supervisors in handling minor mental health problems.

Every program however, requires close cooperation between top management, the medical department and the personnel staff.

—*Industrial Relations News*, July 18, 1959.

Nurse just tears this new foil suture packet open to give you stronger, more pliable surgical gut. *It's sterilized by electron beam.*

ETHICON®

Smoke Eaters

Associated Firefighters of Massachusetts will have the state legislative committee work toward general court passage of a bill accepting smoke inhalation injury as an occupational disease of firefighters, and thereby requiring pension and other benefits to be paid to those suffering from this type of injury sustained in the line of duty.

—*Haverhill* (Mass.) *Journal*, July 3, 1959.

Silicosis — Again

The Commonwealth of Pennsylvania pays out about a million dollars a month to 5,810 victims of occupational diseases. The major portion are victims of silicosis. Most of those receiving the benefits are coal miners who are totally disabled or those who survive them after their death. They either died from the asthma or from heart attacks or lung disease brought on by this scourge of the coal mines.

The Department of Health is now doing something about it. A survey showed that in the anthracite counties of Schuylkill, Luzerne and Lackawanna, silicosis is the commonest cause of death. On a statewide basis, it is eighth among the common causes of death in males over 65. From March 1957 through last February, there

do you have a problem in industrial dermatitis?

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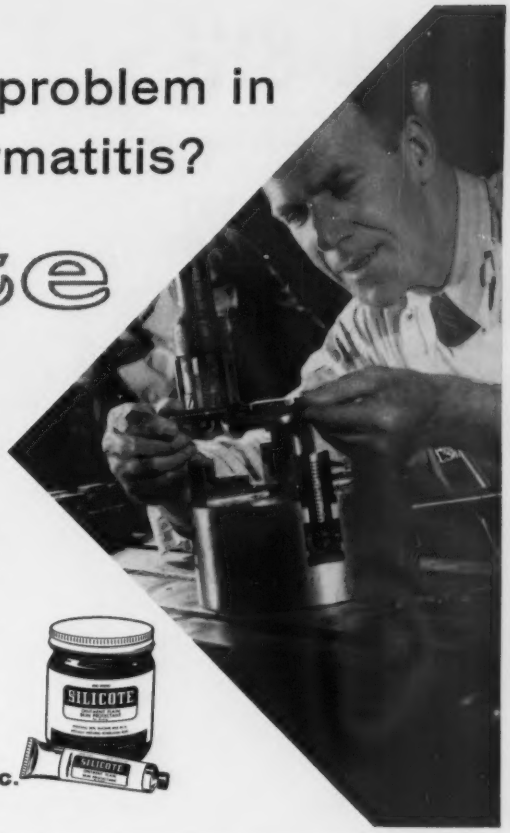

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of contact dermatoses, Silicote clears up many cases not responsive to other therapy.

Silicote is the only preparation containing 30% silicones (dimethicone) in specially prepared petrolatum base. Silicote is non-occlusive.

May we work with you in your particular problem? Send for clinical supply.

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were 3,000 deaths in Pennsylvania attributed to silicosis. In a mine-by-mine survey, the Health Department is using dust sampling equipment, anemometers and smoke tubes to measure atmospheric conditions in the mines and X-rays and vitalometers to examine the miners.

Jan Liebman, M.D., director of the Department's Division of Occupational Health, is directing the survey. Recommendations will be based on the findings. Experience has taught that legislation will be required to implement the recommendations effectively.

—*Allentown* (Pa.) *Call*, July 14, 1959.

Less Accidents

On-the-job accidents have dropped to the lowest level in 20 years. The spread of organized industrial accident prevention programs helped cut last year's toll to 1.8 million accidents, off 25% from the peak year of 1943.

—From *Wall Street Journal*, July 29, 1959.

Big Business

General Motors maintains 130 medical departments in its plants in the United States and Canada and employs 160 industrial physicians and 750 nurses.

—*Nashville* (Ga.) *Herald*, June 11, 1959.

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This child has leukemia—one of the most tragic forms of cancer. Only research is keeping her alive.

Ten years ago, children stricken with leukemia—cancer of the blood-forming tissues—had only a few weeks or a few months of life. Today, many of these children have had wonderful, precious months, even years, added to their lives, thanks to dramatic discoveries in the research laboratories.

Until science finds the means to *save* them, however, they live on borrowed time. The American Cancer Society's research program includes $1,500,000 annually for research related to leukemia. Millions of dollars more are needed to conquer this grim disease—a disease which kills 2,000 children each year, and which is taking an increasingly larger toll of the lives of adult men and women.

You can help research find the answers that will save these lives. Give generously to help support the American Cancer Society's intensive research assault against leukemia and all other forms of cancer.

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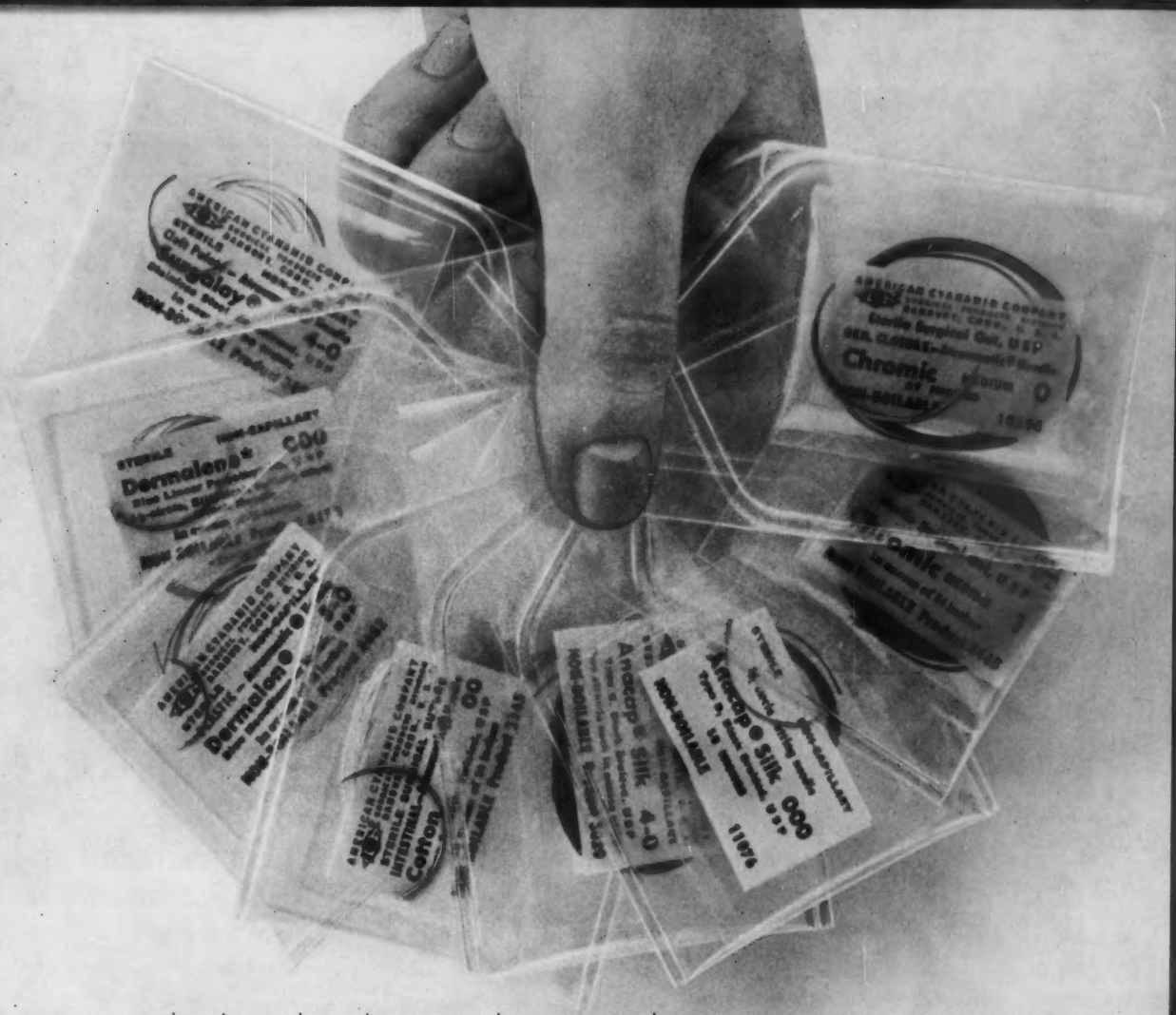

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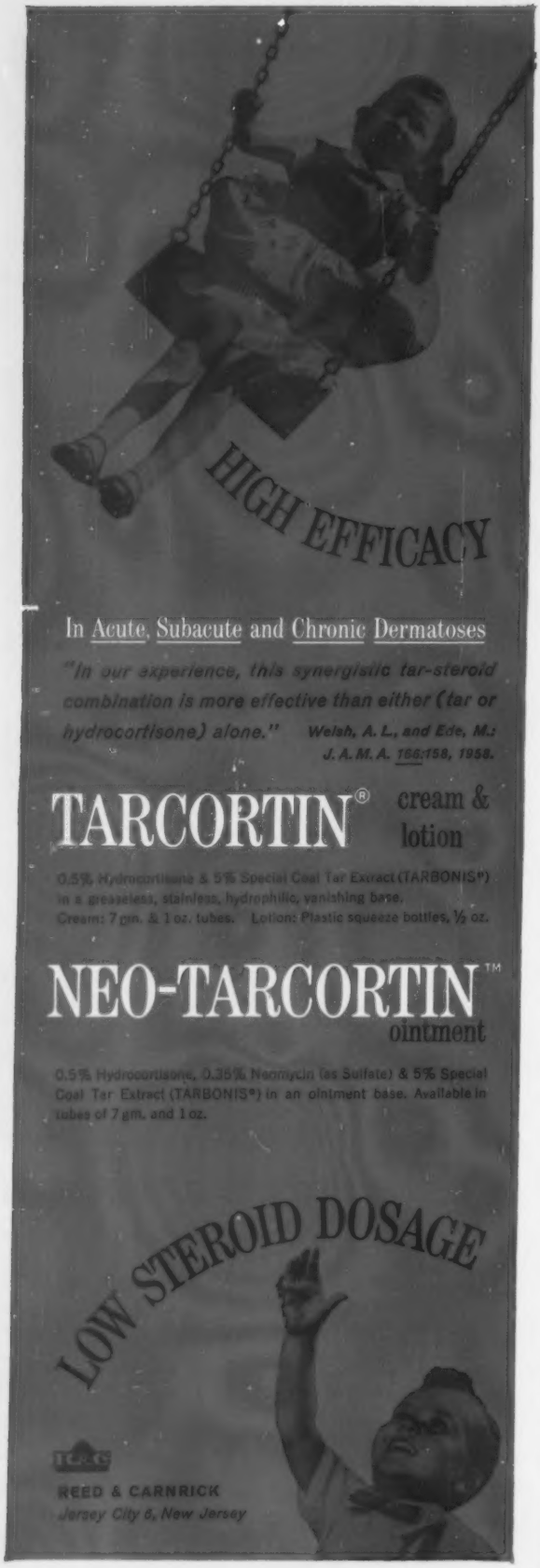
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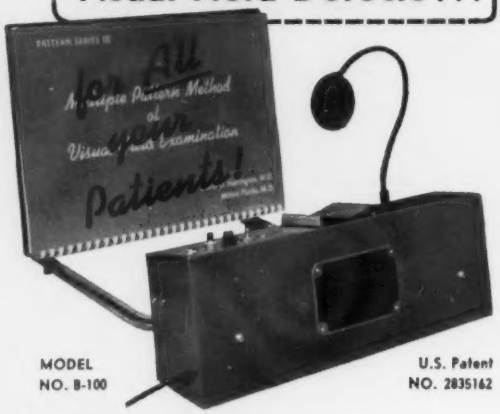

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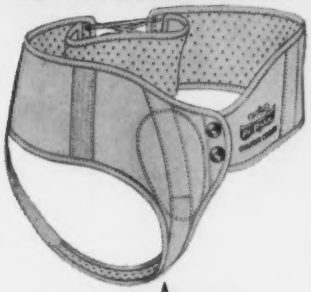

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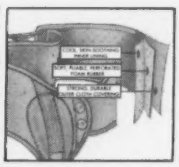

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DRAMATIC IMPROVEMENT IN TRADITIONALLY REFRACTORY RINGWORM INFECTIONS

Tinea of the toenails of 7 years' duration—after 4 months of treatment with GRIFULVIN. Infecting organism, **Trichophyton rubrum.**

Same patient after 6 months of treatment with GRIFULVIN. Infection has cleared; healthy nail growth is almost complete.

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- *Tinea corporis* usually clears in 2 to 4 weeks; itching stops in 3 to 5 days
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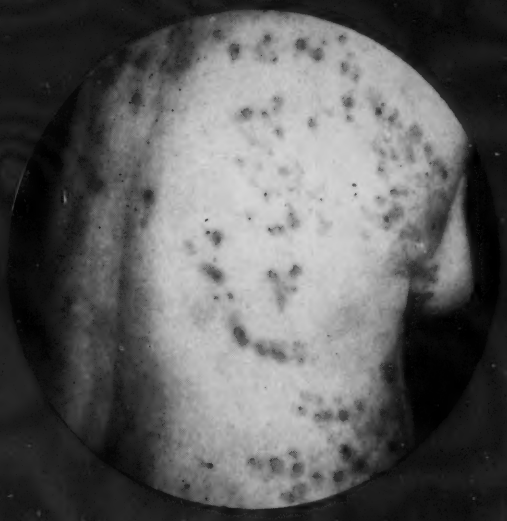
- Oral GRIFULVIN appears to have a very low level of toxicity

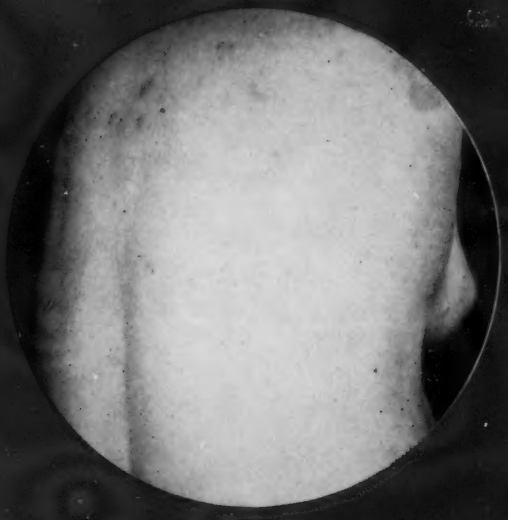
Literature on details of administration and dosage is available upon request.

Supplied: 250 mg. scored, aquamarine tablets, imprinted McNEIL, bottles of 16 and 100.

(1) Blank, H., and Roth, F. J.: A.M.A. Arch. Dermat. 79:259 (March) 1959. (2) Williams, D. I.; Marten, R. H., and Sarkany, I.: Lancet 2:1212 (Dec. 6) 1958. (3) Goldfarb, N., and Rosenthal, S. A.: Current M. Digest 26:67 (April) 1959. (4) Wrong, N. M.: Canad. M.A.J. 80:656 (April 15) 1959.



Before treatment—tinea of the body of 9 years' duration. Infecting organism, **Trichophyton rubrum.**



After 18 days of treatment with GRIFULVIN. Healing is virtually complete.

Photographs courtesy of Harvey Blank, M.D., Miami, Fla. The patients shown above received GRIFULVIN (griseofulvin, McNEIL)

1. Borrus, J. C.: J.A.M.A. 157:15[illegible]ril 30, 1[illegible] 2. Selli[illegible] S.: J.A.M.A. 157:1594, April 30, 1955. 3. Lemere, F.: [illegible]rthwest Me[illegible]098, Oct. [illegible]5. 4. Bene[illegible] B. and [illegible]ocutti, C.: Lav. neuropsichiat. 18:693, 1[illegible]5. Selling[illegible].: J. Clin[illegible] Exper. Psy[illegible]th. 17:7[illegible] March 1956. 6. Berglund, M., Blumenthal, B[illegible]Flordh, P.: [illegible]nska läk. 5[illegible]3362, Dec. [illegible] 1956. 7. [illegible]el, H. A., Wood, J. A. and Dixon, H. H.: [illegible]ew York Acad[illegible]c. 67:780, May 9, 1957. [illegible] Hollister[illegible]., Elkins, H., Hiler, E. G. and St. Pierr[illegible] Ann. New Yo[illegible] Acad. Sc. 67:789, May 9, [illegible]957. 9. Ga[illegible]: Rass. med. 34:233, July-Aug[illegible]957. 10[illegible]i, R. et al.: J. Pediat. [illegible]xis 20:27, [illegible]g. 1957. [illegible]Viklund, P[illegible]: Anaesthesist [illegible]07, Aug[illegible]. 12. Tucker, W. I.: Sout[illegible]. J. 50:1111, Sept. 195[illegible]5. Rolandi[illegible] Attual. ostet. [illegible] 3(6), [illegible]9, Nov.-Dec. 1957. 14. [illegible]ecker, W.: Klin. Mon[illegible]1. Augenh[illegible]2):224, 1958. [illegible]hebiance[illegible]G. and Cerqui, T.: Oto-[illegible]ing. ital. 26(2):143, 1958. 16. [illegible]o, G.: Miner[illegible]9:1914, 1958. 17. [illegible]uso, R. and [illegible]ati, F.: A[illegible]eurol. [illegible]3(1):36, J[illegible] 1958. 18. [illegible]Gazz. med. ital. [illegible]:49, Feb. [illegible]astur, R.[illegible]: J. Indian M. Prof[illegible]13 Feb. 1958. [illegible]et, W.: Therap. [illegible] 97:66, Fe[illegible]21. B[illegible]P.: Lyon méd. 19[illegible] March 2, 1958. [illegible]iglia, G.: Mine[illegible] 10:218, M[illegible]15, 1958. [illegible]dlander, H. S.: [illegible] Cardiol. 1:395, [illegible]1958. 24. McCle[illegible]: Arch. Pe[illegible] 75:101, [illegible]25. Sprauer, V[illegible] J. [illegible] Internat. Rec. Med. [illegible] GP Clinics 171:[illegible] 1958. 26. [illegible]obinson, R.[illegible] Robinson, H. M., [illegible]r.: South. M. J. 51:[illegible]09, April 1958. 27. [illegible], S. and Pe[illegible]er, L.: Ne[illegible]ed. 58:1285, April 15, 1958. 28. Bouquerel, J., Naviau and [illegible]ne: Ann. méd. [illegible]sychol. 116[illegible]e 1958. 29. Reboul, E., Reboul, M. and Dorgeuille, C.: Maroc [illegible]37:784, July 1958. 30. B[illegible] Lyon méd. 200:885, Nov. 1958. 31. Lamphier, T. A.: Maryland M[illegible] 7:627, Nov. 1958. 32. Leuke[illegible] Med. Klin. 53:2113, Dec. 1958.

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